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Record of Decision

Final Environmental Impact Statement

For the Management of the Red-cockaded Woodpecker and its Habitat on National Forests in the Southern Region

Volume I



"Recovery Through Management"

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Department of
Agriculture**



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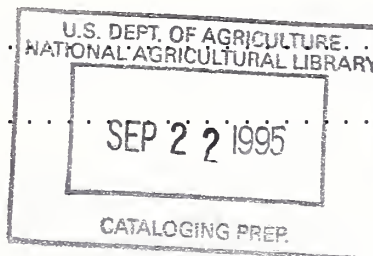


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I. INTRODUCTION

The red-cockaded woopecker (RCW) was listed as endangered in 1970. The Forest Service has been actively involved in RCW management since 1975, and management has evolved with better knowledge of the RCW's biology and habitat needs. In spite of management efforts many small populations continue to decline. The realization of these declines, in conjunction with a precedent set by litigation on the National Forests in Texas, prompted the Regional Forester's decision in 1989 to develop a more comprehensive management strategy for the RCW. Appendix B of this document contains a detailed chronology of past RCW management and events which have affected that management.

The Forest Service's role in recovery of the RCW is critical. Over 50 percent of known RCW occur on National Forest System lands. More importantly, 12 of the 15 populations identified in the Fish and Wildlife Service's 1985 RCW Recovery Plan as needed to recover the species, nest and forage for food totally or in part on National Forests.

The Final Environmental Impact Statement (FEIS) considers the biological, social and economic dimensions of the RCW issue. The Standards and Guidelines developed in Alternative E are based on the best available information and are ecologically sound. They will provide for recovery of the RCW, and protect the long-term health of the Southern National Forests. The Standards and Guidelines will provide for a steady supply of timber and nontimber resources that can be sustained over the long-term without degrading the health of the forest or other environmental resources.

II. DECISIONS

This Record of Decision affects the Southern Regional Guide and land and resource management plans (forest plans) for the National Forests in Alabama, Georgia, Tennessee, Kentucky, North Carolina, South Carolina, Florida, Louisiana, Mississippi, Arkansas and Texas. My decision is to select Alternative E from the accompanying Final Environmental Impact Statement (FEIS) as the new Regionwide management direction for the RCW.

The decision applies only to National Forest System lands. It does not apply to any other federal, state or private lands. The decision addresses the significant public issues and considers recent policy changes, such as ecosystem management.

This decision is comprised of two elements, which ensure the continued short term as well as the long term conservation and recovery of the species. The establishment of Regionwide direction, as described below under item (1) and the amendment of 11 Forests Plans, as described under item (2):

(1) Revision of the Regional Wildlife Habitat Management Handbook, FSH 2609.23R, RCW Chapter (Handbook), and incorporation of that Handbook into the Southern Regional Guide through amendment, to establish new Regional Standards and Guidelines for the management of the red-cockaded woodpecker and its habitat.

These Standards and Guidelines are set out in full in Appendix A, and are summarized here:

- o Establish criteria to delineate RCW Habitat Management Areas (HMAs).
- o Determine population objectives that ensure demographic stability.

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- o Establish four Management Intensity Levels (MILs) which are based on the risk of extirpation (local extinction) faced by the RCW population in the HMA. The risk categories are determined based on population size and trend. This "variable assist" approach to RCW recovery increases the level of habitat protection and management for high-risk populations.
- o Emphasize the use of artificial cavities and the moving of RCW from area to area (translocation) to speed population expansion and recovery of the species.
- o Establish minimum rotation lengths ranging from 70 to 120 years depending on the species of pine being managed in stands managed with even-aged and two-aged regeneration methods. Establish maximum diameter limits based on pine species and site quality for stands managed with uneven-aged regeneration methods. Habitat Management Areas would produce woodpecker habitat and timber products on a sustained-yield basis.
- o Emphasize thinning to reduce southern pine beetle risk and enhance RCW habitat.
- o Emphasize prescribed fire, including growing season burns, to control midstory vegetation in pine and pine-hardwood forest types throughout HMAs, especially within clusters.
- o Establish criteria to assure adequate foraging habitat (6350 pine trees greater than 10" diameter, 30 years old or older within 1/2 mile of and connected to the clusters.)
- o Permit a wide range of regeneration methods. Use of various silvicultural practices would be based on balancing current RCW habitat needs with existing stand condition, site quality, and regeneration of the forest which will provide future habitat.
- o Limit regeneration of the oldest 1/3 of pine and pine-hardwood acres until rotation age. This will ensure suitable potential cavity trees in the shortest time.
- o Encourage restoration of longleaf and other desirable pine species in areas where they occurred historically and would provide better habitat for the RCW.
- o Establish monitoring requirements to determine if the objectives of the new RCW management direction are being met.
- o Require monitoring intensity be linked to population size and vulnerability of the RCW population.
- o Include implementation (quality control), effectiveness (systems control), and policy validation (mission control) monitoring.

These shall become effective and implemented for each Forest within 3 years from the date of this decision through individual forest plan amendments or revisions.

(2) Immediate, non-significant amendment of the 11 forest plans to provide direction on the forests pending each forest's establishment of population objectives and HMAs and adoption of the Regionwide Standards and Guidelines. The amendments consists of:

- (a) Establishment of "tentative HMAs" and population objectives (Appendix C-M).

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- (b) Establishment of the following short-term standards and guidelines that apply within the tentative HMAs pending incorporation of the Regional standards and guidelines into each Forest Plan.
- For areas encompassing active and inactive clusters and suitable RCW habitat within 3/4 miles of such clusters, the Standards and Guidelines are the same direction currently in the Interim Standards and Guidelines.
 - For areas outside the 3/4-radius circles, the Standards and Guidelines are the applicable forest plan standards and guidelines except only the following silvicultural systems and practices are allowed:

Thinning;

Irregular shelterwood method (two aged);

Single-tree and group selection methods (uneven-aged);

Clearcutting method (even-aged) would be allowed to restore longleaf, shortleaf, or other desirable native pine species to appropriate sites currently occupied by trees less suitable for the RCW. This would require a site-specific environmental analysis showing no detrimental effect to the RCW. If a Forest chooses to begin restoration during the transition period between the issuance of the ROD and their Forest Plan amendment or revision, the Forest must first identify sufficient recruitment stands and foraging habitat to meet their tentative population objective identified in Table 2-E1 of this FEIS.

I have selected the phased process requiring each forest separately, and after this Decision, to establish population objectives and HMAs and to adopt the Regional Standards and Guidelines so that each Forest may address specific situations unique to it. A forest-specific approach allows local flexibility to address local conditions including other resources and values while providing Regional consistency in the effort to avoid jeopardy and aid in the recovery of the species.

Changes in FEIS from DEIS

Alternative E was modified in the FEIS to address comments to the DEIS. Although, Alternative E was changed these changes are within the range of alternatives and effects disclosed in the DEIS. On that basis I have determined that they do not constitute a need for supplementation of the DEIS for additional comment.

The following is a brief summary of these changes:

1. Tentative HMA delineation will be based on the distribution of active and inactive clusters in 1986, instead of a point in the future when Forest Plans are amended/revised. Criteria in Appendix A of the FEIS are still applicable.

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2. Any population decline greater than 10 percent over a five year or less period will trigger placing that population in a more protective management intensity level, as well as initiation of consultation with the Fish and Wildlife Service (FWS).
3. Flexibility to include wilderness within HMAs.
4. Include shortleaf pine in the southern pine beetle management option.
5. RCW population objectives will be finalized during Forest Plan amendments or revisions.
6. The amount of habitat in the 0-10 and 0-30 age classes can be increased when it is the result of restoring pine species more desirable to the RCW.
7. Foraging habitat requirements can be reduced for recruitment stands in unoccupied habitat (beyond 1.5 miles from an active cluster) to expedite restoration efforts.

The following discussion explains these changes to Alternative E:

Change 1 - The alternative, as originally written, was ambiguous as to which distribution of RCW (point in time) should be used to delineate Tentative HMAs. Basing HMA delineation on current or future RCW distribution was viewed by some people as "foot dragging" on the part of the Forest Service to minimize the acreage devoted to RCW management. Suggested points in time included 1970, the year the RCW was listed as endangered, and 1973, the year the ESA was passed. I agreed that selection of some point in time was a prudent approach to delineating HMAs and selected 1986 because it was the first year in which consistent inventories of RCW on all affected National Forests were completed. This change results in increases in the FEIS to some of the tentative HMA acreages shown in the DEIS.

Change 2 - The concept of different management intensity levels (MIL) for different RCW populations depending on their size and trend was generally accepted by reviewers of the DEIS as an excellent approach to recovery. It was pointed out during the review of the DEIS that the MIL breakdowns were essentially set up for increasing populations. If a population near the top of the population range for its specific MIL should start to decline, it could theoretically decrease significantly before precipitating a change in protection and management. Therefore, I have added an additional criteria to safeguard populations which may experience decline.

Change 3 - Originally Alternative E eliminated the inclusion of wilderness in HMAs and designated wilderness RCW clusters as non-essential. It was pointed out during the review that wilderness comprised of forest types which could be maintained as suitable RCW habitat primarily with prescribed burning should be considered for inclusion in HMAs. Therefore, the flexibility to place wilderness within HMAs has been included. If this occurs, wilderness direction in Forest Plans will provide the appropriate management activities to sustain RCW habitat, compatible with individual wilderness direction.

Change 4 - Southern pine beetles are a significant threat to loblolly pine, especially in the western end of loblolly's range. Therefore, a special management strategy for loblolly in high risk southern pine beetle areas was included in the alternative. It was noted during the review of the DEIS that shortleaf pine is also highly susceptible to southern pine beetles, especially in the piedmont and coastal plain portions of its range. The special management strategy has been expanded to include shortleaf pine, where conditions warrant.

Change 5 - Originally Alternative E established population objectives based on broad physiographic province density objectives. It was pointed out during review of the DEIS that there are areas within individual physiographic provinces that cannot produce the RCW densities identified. To account for the variability in habitat capability within physiographic provinces, Alternative E has been modified to allow Forest Plans to identify final population objectives based on acres of suitable or potentially suitable RCW habitat within HMAs and the desired future condition of these habitats based on land type association. However, the FEIS still establishes tentative population objectives based on broad physiographic province density objectives. Tentative population objectives are identified in Table 2-E1 of the FEIS.

Change 6 - Originally Alternative E stressed the need to restore pine species more desirable to the RCW, particularly longleaf and shortleaf pine. It was pointed out during review of the DEIS that with the guidelines in the alternative, it could take more than 100 years to accomplish restoration objectives. Extending restoration out over more than 100 years was questioned by many people. To expedite the rate of restoration, Alternative E has been modified to allow up to 15 percent of suitable RCW habitat in the 0-10 age class and up to 40 percent in the 0-30 class for the first 20 years of implementation, when harvest and subsequent regeneration can be tied directly to restoration efforts.

Change 7 - This change is also tied directly to expediting restoration efforts. The Forest Service will provide at least 3,175 pine stems ≥ 10 " DBH and at least 30 years old and a minimum of 4,250 square feet of pine basal area for foraging habitat for recruitment stands beyond 1.5 miles from an active cluster. This foraging habitat must be contiguous and continuous with the recruitment stand. The reason for reducing foraging habitat for these recruitment stands from the 6,350 pine stems ≥ 10 " DBH and at least 30 years old, and a minimum of 8,490 square feet of pine basal area that will be provided for all active clusters and all recruitment stands within 1.5 miles of an active cluster, is to speed up restoration efforts. Most of the off site pine occurs in areas that are not currently occupied by RCW. If we were to provide the same amount of foraging habitat for recruitment stands beyond 1.5 miles of an active cluster, as we do for active clusters and recruitment stands within 1.5 miles of an active cluster, we would severely restrict our ability to restore pine species more desirable to the RCW. It may be decades before many of the recruitment stands beyond 1.5 miles of an active cluster are occupied. Enough foraging habitat will be provided to sustain a group of RCWs, if one of these recruitment stands is activated.

III. ALTERNATIVES

Considered in Detail

Common Activities

All alternatives considered in the NEPA process have as a primary objective conservation and recovery of the RCW. Because nesting habitat needs are well established the alternatives have very similar protection and management guidelines for clusters, replacement, and recruitment stands. All require foraging habitat in accordance with the FWS guidelines for preparation of biological assessments and evaluations for the red-cockaded woodpecker (referred to herein as FWS Blue Book), all allow control measures for southern pine beetle, and all rely heavily on thinning to expedite the creation of more desirable RCW habitat. All depend on prescribed burning as a primary disturbance factor and as the primary means for controlling midstory vegetation.

Artificial cavities, cavity restrictors, and translocation of RCW are also critical elements of all alternatives. All except Alternative D allow for production of a full range of multiple uses from the area outside clusters, replacement, and recruitment stands. The alternatives differ primarily by silvicultural activities allowed, rotation lengths, levels of timber production, and area managed for RCW conservation and recovery.

Alternative A (No-Action)

This alternative is the Interim Standards and Guidelines, the direction currently guiding RCW management on all National Forest in the Southern Region except the National Forests in Texas.

- HMA configuration: 3/4 mile radius circles around all active and inactive clusters.
- Tentative HMA acres, region-wide: 1.45 million acres of pine and pine-hardwood.
- Management Intensity Levels: each circle is divided into two zones, area within 1/4 mile of cluster and area between 1/4 and 3/4 mile. Management varies by zone.
- Midstory control: some level of midstory control would be applied to all pine and pine-hardwood types within each 3/4 mile circle.
- Rotations: 120 years for all pine species.
- Silvicultural options: thinning, Irregular shelterwood (two-aged) retaining 25-40 square feet of basal area will be the primary regeneration method. Even-aged methods are allowed for specific situations.
- Estimated regional annual timber sale volume and anticipated timber related employment by 10 year time period for the 11 affected forests: (see FEIS pgs. 328-336, and FEIS Appendix F for a detailed explanation of economic analysis).

<u>Time Period</u>	<u>Volume (MMBF)</u>	<u>Employment (Jobs)</u>
Year 1-10	712	6,600
Year 11-20	721	6,800
Year 21-30	747	7,100

Alternative B

This alternative is based on the 1985 RCW Handbook with the changes/additions included in the above paragraph on "Common Activities."

- HMA configuration: only clusters, replacement, and recruitment stands will be managed specifically for RCW habitat.
- Tentative HMA acres, region-wide: 124,500 acres in clusters, replacement, and recruitment stands.
- Management Intensity Levels: management intensity level does not vary.
- Midstory control: required only in clusters, replacement, and recruitment stands.
- Rotations: 70-100 years depending on pine species.
- Silvicultural options: a full range with emphasis on seed-tree and shelterwood regeneration methods.
- Estimated regional annual timber sale volume and anticipated timber related employment by 10 year time period for the 11 affected forests: (see FEIS pgs. 328-336 and FEIS Appendix F for a detailed explanation of the economic analysis).

<u>Time Period</u>	<u>Volume (MMBF)</u>	<u>Employment (Jobs)</u>
Year 1-10	746	7,000
Year 11-20	775	7,300
Year 21-30	869	8,100

Alternative C

This alternative responds to the demographic needs of RCW by delineating relatively large blocks of land as RCW HMAs.

- HMA configuration: large blocks of pine and pine-hardwood will be managed to provide RCW habitat. Tentative HMAs range from 6,500 to 144,000 acres (see FEIS).
- Tentative HMA acres, region-wide: 2 million acres, including clusters, replacement, and recruitment stands.
- Management Intensity Levels: management intensity varies, depending on RCW population size and trend with smaller populations receiving more intensive management and protection. Five MILs are provided for.
- Midstory control: some level of midstory control would be applied to all pine and pine-hardwood types within each HMA, with total midstory control in clusters, replacement, and recruitment stands.
- Rotations: 60-200 years depending on pine species and site quality.
- Silvicultural options: a full range, but available options vary by MIL. Clearcutting is limited to 4 specific situations. Irregular shelterwood and uneven-aged methods are emphasized.
- Estimated regional annual timber sale volume and anticipated timber related employment by 10 year time period for the 11 affected forests: (see FEIS pgs. 328-336 and FEIS Appendix F for a detailed explanation of the economic Analysis).

<u>Time Period</u>	<u>Volume (MMBF)</u>	<u>Employment (Jobs)</u>
Year 1-10	670	6,300
Year 11-20	710	6,500
Year 21-30	746	7,100

Alternative D

This alternative responds to concerns over the effect of timber harvest on RCW. There will be no sustained production of forest products, although cutting of some trees will be allowed to enhance RCW habitat and reduce the risk of insect outbreaks.

- HMA configuration: same as Alternative C.
- Tentative HMA acres, region-wide: same as Alternative C.
- Management Intensity Levels: same as Alternative C.
- Midstory control: same as Alternative C.
- Rotations: there is no sustained timber harvest, therefore no rotations are established.
- Silvicultural options: thinning to enhance RCW habitat and reduce risk of insect outbreaks. The only regeneration cutting is to restore desirable pine species, usually by clearcutting.
- Estimated regional annual timber sale volume and anticipated timber related employment by 10 year time period for the affected 11 forests: (see FEIS pgs. 328-336 and FEIS Appendix F for a detailed explanations of the economic analysis).

<u>Time Period</u>	<u>Volume (MMBF)</u>	<u>Employment (Jobs)</u>
Year 1-10	604	5,700
Year 11-20	633	6,000
Year 21-30	607*	5,700*

*Under Alternative D volume and employment will continue to drop as needed pine restoration is completed.

Alternative E (Decision)

This alternative is described at pages 1-2 of this ROD and is set out here to allow for comparison with the other alternatives. This alternative is similar to Alternative C with additional mitigation (briefly described below under MILs) to ensure conservation and recovery of RCW while minimizing short-term economic impacts.

- HMA configuration: same as Alternative C.
- Tentative HMA acres, region-wide: same as Alternative C.
- Management Intensity Levels: management Intensity varies by RCW population size and trend. Management intensity can also vary within an HMA depending on RCW population size, relative to HMA size, and distance from an active cluster. Four MILs are provided for.
- Midstory control: some level of midstory control would be applied to all pine and pine-hardwood types within each HMA. Retention of some desirable midstory species is allowed within clusters, replacement, and recruitment stands.
- Rotations: 70-120 years depending on pine species.

- Silvicultural options: a full range, but available options vary by MIL. Clearcutting is limited to 3 specific situations. Irregular shelterwood is emphasized.
- Estimated regional annual timber sale volume and anticipated timber related employment by 10 year time period for the 11 affected forests:

<u>Time Period</u>	<u>Volume (MMBF)</u>	<u>Employment (Jobs)</u>
Year 1-10	740	6,900
Year 11-20	767	7,100
Year 21-30	764	7,200

Eliminated from Further Study

The interdisciplinary team considered 10 alternatives during the analysis process. Five of these were eliminated from detailed study. The following is a brief description of and reason for elimination for each. For more details see the FEIS, pages 35-39.

- (1) Preservation; delineate HMAs and establish population goals per Appendix A of FEIS, but allow habitat to age, no silvicultural manipulation, no prescribed burning, no direct RCW improvements. Only natural forces would impact habitat conditions.

Reason for elimination: given the relatively small and isolated islands of RCW habitat which remain this approach would not ensure a constant flow of suitable RCW habitat through time. Therefore this alternative will not meet the objective of recovering RCW, and through time would eventually lead to declines in populations.

- (2) Historic range; would be identical to Alternative C, except the scope would be expanded to include all inactive clusters and all Forest Service System lands known to have been occupied by RCW in 1970.

Reason for elimination: implementation of this alternative would delay recovery of the RCW by diverting needed resources, both funds and juvenile RCW, from recovery populations and other populations which currently have RCW.

- (3) Total uneven-aged management; would be identical to Alternative E, except only uneven-aged silvicultural systems would be allowed. No even-aged management would be used for any reason.

Reason for elimination: given the existing condition of much RCW habitat a full range of silvicultural options are needed to expeditiously restore desirable forest types. Also, two of the alternatives analyzed in detail, C and E, offer the manager the option of utilizing uneven-aged methods.

- (4) Short rotation; resembles an industrial management regime designed to grow large pulpwood or small sawtimber. Would implement a 40-50 year rotation and use only even-aged silviculture. Future cavity trees would be provided by identifying and protecting recruitment stands.

Reason for elimination: given that the recruitment stand strategy to provide future nesting habitat without use of artificial cavities has been unsuccessful and such short rotations will allow for no future cavity trees in the general forest area, this alternative will not recover the RCW.

(5) Texas Court-ordered Management Plan; this is the plan developed by the National Forests in Texas to comply with the District Court order resulting from *Sierra Club v. Lyng* (694 F. Supp. 1260 (E.D. Tex. 1988, as modified October 20, 1988) affirmed in part, vacated in part (5th Cir. 1991) and District Court Order of March 24, 1994). It places 1200 meter radius circles around clusters and utilizes an untested uneven-aged management strategy which only allows periodic thinning of stands. Clearcutting could be used to restore longleaf pine.

Reason for elimination: the silvicultural system required in this Plan cannot insure a continuous supply of habitat through time and the delineation of 1200 meter radius management areas, especially in areas of low cluster density, cannot provide the large contiguous blocks of habitat necessary for RCW recovery. In addition, this plan received a jeopardy opinion during consultation with the FWS, because it was unlikely to provide habitat over time to recover the species.

Environmentally Preferred

The environmentally preferred alternative is the alternative which causes the least impact to the biological and physical environment. It also is the alternative which best protects, preserves, and enhances historic, cultural and natural resources. Within the alternatives considered in detail, reasonable foreseeable impacts could result from timber harvest and associated road construction/reconstruction and prescribed burning. Therefore, those alternatives with the least timber harvest and prescribed burning should be environmentally preferable.

Alternative D, because it does not provide for a sustained flow of timber products, will likely have the least impact on the biological and physical environment. Conversely, it is among the alternatives with the highest proposed prescribed burn program. Although Alternative D has no sustained timber program, one of its key elements is the restoration of pine species preferred by the RCW, primarily through clearcutting existing off-site pines and planting the desired species. On many National Forests, these restoration efforts will require decades to complete. These high levels of burning and decades of timber harvest to restore desirable pine species reduces the differences between expected impacts from Alternative D and the other alternatives.

I did not select Alternative D as the new RCW management direction because it will have the greatest economic impact, it does not fit the Forest Service's multiple use or ecosystem management objectives, and in the long-term it may not be able to perpetuate RCW habitat in some pine types.

The activities projected in Alternative E can be carried out in an environmentally sound manner. The Regional Standards and Guidelines (Appendix A, ROD) assure thresholds are established to protect physical and biological resources. Implementation of Alternative E will lead to recovery and conservation of the RCW while minimizing economic impacts by providing a sustained flow of forest products.

IV. Issues/Public Involvement

An important part of any environmental analysis is to identify issues associated with the proposed action.

The Forest Service uses a process called "scoping" to determine the issues to be addressed in the environmental analysis and to identify significant issues related to the proposed action. The scoping process is managed by the interdisciplinary team (ID team) and the responsible official (Regional Forester in this case), who determines whether or not the issues generated are significant to the proposed action.

As a result of the multiple phase process used to develop new management direction for the RCW, the scoping process has extended over several years. Combining the scoping for the Interim Standards and Guidelines and the proposed action are appropriate as both deal with management of the RCW and its habitat. A DEIS was prepared with alternatives and analyses which respond to these issues. The DEIS was distributed in December 1993 for public review and comment. A total of 485 external comments were received and considered on the Interim Standards and Guidelines and the Draft Environmental Impact Statement (DEIS).

Generally, public comments were sharply divided into two groups. One segment of commentators favored Alternative B, which produces the maximum amount of timber and devotes the least acreage to RCW management. A significant portion of this group advocated management strategies which would allow even more timber harvest than Alternative B.

The other major segment of reviewers were somewhat divided between Alternatives C, D, and E. The majority, however, preferred Alternative D, or some variation of it. Alternative D allows the least amount of timber harvest in the long-term. All three of these alternatives devote the same acreage to RCW management in the DEIS; however because of changes in the FEIS Alternative E has some additional acres in HMAs.

In final analyses, Alternative E (preferred) was modified in response to comments. The final analyses are recorded in the Final Environmental Impact Statement (FEIS), which forms the basis for my decision.

Issues

A summary of the issues identified in the scoping process follows. For more detail on these issues, refer to the Final Environmental Impact Statement (FEIS), Chapters 2 and 3.

Biological Diversity Issues

RCW Populations. Some believe that any level of clearcutting or other even-aged timber management methods cause habitat loss and fragmentation or draw the birds into trees subject to high mortality due to lightning and windthrow (seed-trees), thus resulting in population declines. Most of these people feel that only uneven-aged timber management methods are acceptable. Others consider clearcutting and other even-aged methods, if properly implemented, compatible with management and recovery of the RCW.

Other Proposed, Endangered, Threatened and Sensitive (PETS) Species. Some believe the proposed RCW management will cause a decline in habitat quality or affect populations of other PETS species such as the Louisiana pearlshell mussel, Louisiana black bear and bald eagle. Others considered the proposed management as being positive for a large number of PETS species.

Mast-Dependent Species. Some believe that prescribed burning, especially growing season burns, and other types of hardwood midstory control will adversely affect mast-dependent species such as deer, turkey, and squirrel. Others feel that species like turkey and deer are very adaptable and will be affected little, if at all.

Economic and Social Issues

Available Timber Volumes and Associated Jobs and Income. Many people, especially in small communities, believe the proposed RCW management will result in massive reductions in timber volumes available for harvest, with a subsequent reduction in timber related jobs, income and USDA payments to the states. Payments to states represent 25% of the receipts taken in on National Forests, which is used for local roads and schools.

Below-cost Timber Sales. Some believe the added cost of mitigation for RCW, ie., retaining residual trees in harvest areas, extending rotations, etc., will drive some National Forest into operating at below-cost, jeopardizing continuation of the timber management program.

Oil and Gas Exploration and Development. Some believe proposed RCW management will significantly limit access to National Forest System lands for the purpose of oil and gas exploration and development.

Recreation Issues

Recreation Facilities and Trails. Some believe the construction and use of recreation facilities, especially off-road vehicle trails, will be curtailed due to the proposed RCW management.

Wilderness. Some believe that southern pine beetle control in wilderness to protect RCW groups or their foraging habitat adversely affect wilderness attributes and use.

Physical Resource Issues

Air. Some feel the increased levels of prescribed burning associated with proposed RCW management may cause potential degradation of air quality.

Response to Issues

I reviewed all the alternatives and their environmental consequences before choosing Alternative E. There are definite biological, ecological, social and economic tradeoffs among the alternatives (see Section III for summary of alternatives). I have considered these tradeoffs in light of the issues and comments raised during the analysis.

Biological Diversity Issues

Discussion of biological issues necessarily involves reference to requirements of the National Forest Management Act and its implementing regulations regarding diversity of wildlife.

The National Forest Management Act requires the Secretary of Agriculture to promulgate regulations to guide Forest Service development and revision of Forest Plans. One of the statutory requirements is "specifying guidelines for land management plans developed to achieve the goals of the Program which... (B) provide for a diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple use objectives, ..." 16 USC 1604(g) (3) (B). The diversity provision in one of ten subsections of direction from Congress regarding the promulgation of planning regulations for Forest Plans to provide for multiple use and sustained yield. In accord with NFMA, the Secretary promulgated regulations which address the diversity provision, 36 CFR 219.3, 219.19, 219.26, 219.17(a) (5), 219.27(a) (6) and (g).

Applying the statutory language to provide for diversity of plant and animal communities through regulations, plans and actions has been, and continues to be, a formidable challenge. The Committee of Scientist who provided scientific advice to the Forest Service on the crafting of NFMA regulations accurately predicted the difficulty. The Committee stated that, "it is impossible to write specific regulations to 'provide for' diversity" and that "there remains a great deal of room for honest debate on the translation of policy into management planning requirements and into management programs" (44 Fed. Reg. 26,6000-01 & 26,608 (May 4, 1979)). Diversity is a concept at the frontiers of ecological science and the use of different approaches is appropriate depending upon the particular context of its application.

NFMA's fish and wildlife resource regulation, 36 CFR 219.19, is one part of the planning regulation to provide for diversity within multiple use objectives. The fish and wildlife resource regulation has seven provisions designed to meet the goal of managing National Forest habitat for viable populations of existing and on-native vertebrate species in the planning area. Through 36 CFR 219.19 and other provisions of the planning regulations Forest Plans provide for diversity of plant and animal communities within multiple use objectives. The Forest Service uses the planning process and ongoing monitoring, evaluation and adjustment of fish and wildlife standards to prevent listing of species under the Endangered Species Act and avoid extirpation of species from its actions.

The NFMA diversity provision and the fish and wildlife resource regulation establish a goal to provide habitat for the continued persistence of vertebrate species in the planning area. The goal is met by following the provisions of 36 CFR 219.19(a) (1) through (a) (7). The bottom line is that the Forest Service may not adopt a plan that it knows or believes would through its actions extirpate a vertebrate species. Viability assessments of all vertebrate species are not required.

Court decisions have recognized the NFMA diversity provision and the 36 CFR 219.19 fish and wildlife regulation to be goals within the context of multiple use. "Diversity is not the controlling principle in forest planning, although it is an important goal to be pursued in the context of overall multiple-use objectives." Sierra Club v. Robertson, 845 F. Supp. 485, 502 (S.D. Ohio, 1994) (discussing diversity and viability and concluding that the Wayne National forest Plan "provides diversity of plant and animal communities while balancing a mix of multiple uses.") The Fifth Circuit Court of Appeals also recognized that diversity is to be provided for in the context of managing for multiple uses, when it upheld even-aged timber harvests on the National Forests in Texas:

The directive that National Forests are subject to multiple uses, including timber uses, suggests that the mix of forest resources will change according to a given use. Indeed, NFMA regulations anticipate the possibility of change (*Sierra Club v. Espy*, 38 F. 3d. 792 at 800, 5th Cir. 1992).

The Circuit Court then concluded that it was for the Forest Service to decide how best to balance the goal of maintaining diversity with managing the forests for multiple uses:

That protection means something less than preservation of the status quo but something more than eradication of species suggests that this is just the type of policy-oriented decision Congress wisely left to the discretion of the experts - here, the Forest Service. 38 F. 3d. at 800.

The Forest Service's discretion is "not unbridled," 38 F. 3d. at 800, but generally speaking, how to provide for diversity is to be left to the Forest Service.

Other courts have upheld Forest Service Land and Resource Management Plans (Forest Plans) or project decisions from challenges on NFMA diversity and the fish and wildlife resource regulation grounds. See *Sierra Club v. Marita*, 46 F. 3d 606 (7th Cir. 1994); *Krichbaum v. Kelley*, 844 F. Supp. 1107, 1114 (W.D. Va. 1994) (on appeal to Fourth Circuit); *ONRC v. Lowe*, 836 F. Supp. 727 (D. Ore. 1993, on appeal to the Ninth Circuit); *Glisson v. USFS*, (S.D. Ill. August 26, 1993) (on appeal to the Seventh Circuit); *Sierra Club v. Robertson*, 784 F. Supp. 593 (W.D. Ark. 1991) and 810 F. Supp. 1021, 1027-28 (1992), affirmed on other grounds (standing), 28 F. 3d 753 (8th Cir. 1994). See also *Seattle Audubon Society v. Evans*, 952 F. 2d 297, 300 (9th Cir. 1991). The courts have recognized that NFMA does not create a concrete standard for diversity within multiple use objectives, and no court has overturned a Forest Service finding of compliance with the NFMA diversity and the fish and wildlife resource regulation.

One clear standard for complying for diversity is that the agency may not manage for one species in such a way as to extirpate others. *Seattle Audubon v. Moseley*, 798 F. Supp. 1473 (W.D. Wash. 1992), (spotted owl strategy may not protect owls but extirpate other vertebrates).

In Alternative E, the Forest Service has produced a management strategy that is in full compliance with the diversity and fish and wildlife resources requirements of the NFMA and the 36 CFR 219.19 regulation. The maintenance of a fire-dependent ecosystem will provide for diversity and the viability of wildlife species. I find that implementation of the standards and guidelines adopted in this Decision will not cause any species to be listed as threatened or endangered under the ESA. The Fish and Wildlife Service has also found that the standards and guidelines will not jeopardize the continued existence of any listed species.

RCW Populations

Some believe that any level of clearcutting or other even-aged management methods cause habitat loss and fragmentation or draw the birds into trees subject to high mortality due to lightning and windthrow (seed-trees), thus resulting in population declines. These people feel that only uneven-aged timber management methods are acceptable. Others consider clearcutting and other even-aged methods, if properly implemented, compatible with management and recovery of the RCW.

Record of Decision

In the past, clearcutting has been the dominant regeneration method used on the 11 national forests with RCW. Its past use is perceived by many as the primary reason for declines in RCW populations. However, there is evidence which suggest that properly managed clearcutting with some modifications and other conventional even-aged regeneration methods are compatible with RCW management and recovery.

Walters et al. (1988a) and Conner and Rudolph (1991a) studied and documented the impacts of demographic isolation on RCW. Their studies concluded that habitat fragmentation between demographically isolated RCW clusters could inhibit expansion of groups and contribute to their extirpation. Conner and Rudolph's study went further to indicate that the effect of fragmentation decreases as population densities increase. Hooper and Lennartz (1995) found that only in low density populations (less than 5 RCW groups within 1.25 miles of each other) did the relative availability of foraging habitat seem to be a factor in population viability. Beyer et al. (in preparation) also found no correlation between the availability of foraging and population viability in a relatively dense RCW population.

In addition to these studies there is other evidence to suggest that even-aged management alone may not be the primary reason for RCW population declines. The habitat of the three largest and most viable populations on National Forests, the pre-Hugo Francis Marion National Forest, the Apalachicola Ranger District of the Apalachicola National Forest, and the Vernon Ranger District of the Kisatchie National Forest have been intensively managed with even-aged methods (primarily clearcutting) for 30 years or more. The overall management allowed under Alternative E is much more restrictive and will provide many more old trees than past management under which these populations were sustained.

Alternative E responds to this issue in several ways:

The MIL strategy applies different levels of protection to different RCW populations based on their size and trend. Very small populations (MIL 3 and 4) have very stringent protection measures. For example there will be no even-aged timber harvest within 1/4 mile of clusters in these MILs, not even to restore desirable pine species such as longleaf.

Outside the 1/4 mile zone, in MIL 3 and 4 populations, only irregular shelterwood and uneven-aged regeneration methods are emphasized (FEIS pgs. 200-202).

In keeping with findings of the above studies, it is not until a population is fully recovered (MIL 1) that standard seedtree or shelterwood methods are allowed.

Maximum regeneration areas are set at 25 acres for MIL 3 and 4 and 40 acres for MIL 1 and 2 when using even-aged or two-aged regeneration methods. Most forest plans allowed up to 80 acre regeneration areas for pine species.

Clearcutting is limited to three site specific situations in all MILs (FEIS pgs. 198-199) with emphasis on long-term improvement of RCW habitat.

The extended rotations reduce the number of acres which can be regenerated each 10 year entry period (FEIS page 197).

Other Proposed, Endangered, Threatened, and Sensitive (PETS) Species

Some believe the proposed RCW management will cause a decline in habitat quality or affect populations of other PETS species such as the Louisiana pearlshell mussel, Louisiana black bear and bald eagle. Others recognize the proposed management as being positive for a large number of PETS species.

Over 170 species of plants and animals which utilize RCW habitat or microhabitats within RCW habitat are identified as PETS species. These include 31 species already listed as threatened or endangered (FEIS Appendix C). These species including all currently listed species, should benefit or have no effect from the type of management proposed in Alternative E.

In the event a PETS species would be adversely affected by the proposed RCW management, protection of the species most at risk will take precedence (FEIS 236).

Mast Dependent Species

Some believe that prescribed burning, especially growing season burns, and other types of hardwood midstory control will adversely affect mast-dependent species such as deer, turkey, and squirrel. Others feel that species like turkey and deer are very adaptable and will be affected little, if at all.

The objective of prescribed burning and other forms of midstory control is the reduction of midstory species, both hardwood and pine. It is well documented that mast producing species, growing suppressed in a midstory condition contribute little to overall mast production. In addition, prescribed burning enhances some low growing mast species. Overstory mast producers will be affected very little. In summary, total mast production will be affected little (FEIS 242). Alternative E, as mitigation, allows retention of some desirable midstory species within clusters. There will be no concentrated effort to eliminate any midstory hardwood species outside clusters.

Economic and Social Issues

Many people, especially in timber producing communities, believe the proposed RCW management will result in massive reductions in timber volumes available for harvest, with a subsequent reduction in timber related jobs, income and USDA payments to the states. Some believe the added cost of mitigation for RCW will drive some National Forest into a below-cost situation, jeopardizing continuation of the timber management program. Some believe proposed RCW management will significantly limit access to National Forest System lands for the purpose of oil and gas exploration and development.

Record of Decision

It is recognized that implementation of the new RCW management direction described in this ROD could result in changes in commodity production and a subsequent effect on regional and local economics. The analysis conducted on the alternatives was based on two assumptions: 1) the area outside the HMAs will continue to produce timber at a level similar to that in the past and 2) past timber harvest was evenly distributed over all areas of the forest identified as suitable for timber management. Assumption number 2 is still applicable; however, budgetary and other constraints have invalidated the first assumption. Therefore, the projections of available volumes, income, jobs, and payments to states have been reanalyzed. The Regional effects are displayed in Chapter 3 (FEIS pgs. 326-340). The Regional effects displayed by individual National Forests/States are shown in Appendix F. Effects specific to individual States, Forests, and counties will be included in Forest Plan revisions and amendments.

Examination of volume data in Chapter 3 (FEIS pgs. 326-340) and Appendix F indicates all alternatives exhibit volume declines when compared to the volumes harvested during the late 1980s. If compared to current levels which are represented by Alternative A, Alternatives B and E consistently have higher estimated harvest levels than Alternative A. Alternative B has the highest potential volume available for harvest, while Alternative D has the lowest potential. In the DEIS, Alternative E was at an intermediate level between B and D. Numerous comments in the DEIS expressed concern for local adverse economic effects. Alternative E contains specific elements designed to mitigate economic impacts. The sub-HMA concept for large HMAs with few existing RCW allows increased timber harvest in portions of such an HMA well removed from the RCW. The MIL structure is also designed to mitigate economic impacts by allowing more harvest of forest products as RCW populations increase.

Alternative E was modified in the FEIS to enhance RCW habitat in the long-term. The changes also help mitigate economic impacts by allowing removal of additional trees in the first 20 years. Examples are: providing 1/2 of FWS Blue Book foraging requirements for recruitment stands greater than 1.5 miles from an active cluster to expedite restoration of a more desirable pine species; criteria to exceed the 0-10 and 0-30 age-class standards in specific pine restoration situations; and thinning to reduce risk of southern pine beetle infestation even if foraging is limited. Together these items allow a phasing in of this direction to meet the biological needs of the species and minimize economic impacts.

Some Forests may not be able to fully utilize this flexibility immediately due primarily to existing age class imbalances, i.e., the large percentage of pine forest currently in the 0-10 and 0-30 age classes. As the existing acres in these younger age classes grow older the available volumes increase and stabilize. Income, number of jobs, and payments to states are directly related to available volumes.

It should be noted that some of the current decline in volume in the past few years is attributed to the agency's movement away from the use of clearcutting and the implementation of the Interim Guidelines which have been in place since 1990.

Most National Forests with RCW have traditionally received more money for the timber they sell than it costs to mark the timber and prepare the sale (the timber program is above cost). As a result of implementing any of the alternatives, expenses of marking and preparing sales may exceed the revenue received on a forest (the timber program is below cost). The greatest potential for a forest to be placed in a below-cost situation exists where existing conditions, i.e., age class distributions, lack of foraging habitat, etc. greatly restrict future options under any alternative. The National Forests in Florida as of 1994 have become a below-cost unit. However, this could change in response to the flexibility I have included with the modifications to Alternative E in this FEIS.

Oil and Gas Exploration

Two aspects of RCW management may affect oil and gas exploration and development. These are criteria to protect clusters, replacement and recruitment stands and limitations on clearing for non-silvicultural purposes within 1/4 mile of these stands. Approximately 8 percent (156,700 acres) of the area within HMAs (Alternatives C, D, and E) will be identified as clusters, replacement or recruitment stands and will therefore preclude surface occupancy for exploration or development of oil/gas. Alternatives A and B prohibit surface occupancy on 124,500 acres. Diagonal drilling and other technologies that do not require surface occupancy in clusters, replacement and recruitment stands can be used to develop oil and gas resources. Regardless of alternative, a very small percentage of total National Forests System land will be affected.

Recreation Issues

Some believe the construction and use of recreation facilities, especially off-road vehicle trails, will be curtailed due to the proposed RCW management. Some believe that southern pine beetle control in wilderness to protect RCW groups or their foraging habitat adversely affect wilderness attributes and use.

Although there is some potential for effects on recreation opportunities, that potential is very small. Existing recreation facilities with RCW in or very near them will be affected little. Removal of trees as part of RCW management may reduce shade or eliminate "character" trees. Alternatives A, C, D, and E do require modification or relocation of existing facilities if an adverse effect to RCW is documented. However, a more likely scenario would be that the Forest Service would attempt to lure the birds to another cluster well removed from the facility through use of artificial cavities and other direct management activities. Conversely, if an RCW chooses to excavate its cavity in or adjacent to an existing recreation facility (including ORV trails), modifications to that facility or attempts to lure the bird away are not likely to occur.

There may also be restrictions on the timing of certain potential disturbing activities (such as ORV enduros) to keep them from occurring during the nesting season. All alternatives prohibit or recommend against construction of concentrated use areas in clusters, replacement or recruitment stands. However, even under the most restrictive alternatives these stands represent approximately two percent of the total National Forest System land in the 11 affected forests, leaving 98 percent of the land available for development of recreation facilities without RCW restrictions.

Potential effects on wilderness could result from direct management to sustain RCW in wilderness or the suppression of southern pine beetle to protect clusters or foraging habitat within and adjacent to wilderness. Direct management activities for RCW such as midstory control and prescribed burning if provided for in the specific Forest Plan wilderness direction based on my modification to Alternative E in the FEIS could affect existing wilderness character. Initially there may be some midstory trees cut, resulting in fallen dead trees. These will likely rot away rather quickly. Burning may scorch the trunks of trees.

It should be recognized that fire is a natural element within these ecosystems and proposed management will often yield ecological systems that more closely resemble pre-Colombian conditions than currently exist.

Alternatives A, B, C, and D consider RCW groups within wilderness essential to recovery; therefore control of southern pine beetle could, in compliance with the Southern Pine Beetle FEIS and ROD, occur to protect the clusters and critical foraging habitat. Such control could result in various numbers of trees being cut with subsequent effects on wilderness values.

In response to comments, Alternative E has been modified to consider all wilderness RCW groups "non-essential" and control of southern pine beetles to protect clusters or their foraging habitat within wilderness would not occur. The effects of not controlling Southern pine beetles will be the death of various numbers of pine trees. Because this is a natural process, wilderness values should not be affected (FEIS page 318). Alternative E does allow control of southern pine beetles within wilderness to protect RCW groups within 1/4 mile of, but outside the wilderness boundary or their foraging habitat. Effects would be the same as described for Alternatives A, B, C, and D (FEIS page 319).

Physical Resource Issues

Some feel the increased levels of prescribed burning associated with RCW management may cause potential degradation of air quality.

The most common direct effects of prescribed burning are visibility reduction and respiratory impairment. These effects usually last only for the duration of the burn. Indirect effects include impairment of general air quality downwind from the burn for various periods of time. Burning plans include mitigation to minimize these effects. In addition, the maximum RCW burning program represents only 0.25 percent of total forested acres burned in the South annually (FEIS page 313).

Senate Resolution 285

On October 8, 1994 the United States Senate passed Resolution 285 (Appendix B, page 6, ROD), which addressed items and concerns which were felt critical for the Forest Service to consider as part of this decision and future Forest planning processes. The following is my discussion of how the FEIS and this ROD are responsive to the four major points of Senate Resolution 285:

1. **Continued multiple use management of the National Forest.** I believe this EIS analysis documents that this RCW management direction continues multiple use management. The Final Environmental Impact Statement states in the first chapter, "Habitat Management Areas would produce woodpecker habitat and timber products on a sustained yield basis." (FEIS page 2). The FEIS at page 5 again states, "These areas (HMAs) would be managed for multiple use in a manner that will provide high quality habitat for the RCW.", and again on page 196 in the description of the proposed action, "The area within HMAs... would be managed for a full range of multiple uses..."

Changes in management direction within HMAs, primarily extension of rotations, will result in some reduction in timber volumes available for harvest. Some publics have perceived this reduction as a move away from multiple use management. I perceive the management changes and subsequent declines in available volume as a trade-off for moving toward a more balanced and ecological approach to multiple use management. Such balanced multiple use is supported by Senate Resolution 285 which states, "The Forest Service must not emphasize a single resource at the expense of other resources."

2. **Phase in management changes that amend or revise forest plans to the greatest extent practicable.** The RCW management strategy described in the accompanying FEIS is the latest in a series of strategies which have evolved since the Forest Service first became involved in RCW management in 1975 (see Appendix B, page 2, ROD). These evolutionary changes are the results of increased knowledge of RCW biology. Each management change has become successively more specific based on increased knowledge and experience with managing and monitoring the species.

It is recognized the RCW management strategy required by this decision is more specific than any strategy implemented prior to 1989. Three of the most significant reasons for this were: Litigation in Texas which found the Forest Service had committed a take of RCW and had jeopardized RCW in violation of ESA through its forest management practices (see RCW Management on the National Forest in Texas, Appendix B, page 3), the realization that two thirds of RCW populations on National Forests were in a state of decline in spite of our past management efforts (see Costa-Escano Report, Appendix B pg. 3), and new scientific information concerning the role of demographics in sustaining viable RCW populations, which indicates the need to manage large blocks of land for RCW (see Demographic Isolation, FEIS page 15).

The Forest Service began a conscious effort to phase in protection of RCW and its habitat in 1989 with the "March 27 Policy" (see Appendix B, ROD) and the announcement of that Policy as the first of a three-phase process. The second phase is the Interim Standards and Guidelines. This ROD supersedes the Interim Standards and Guidelines and begins phase three.

The direction in this ROD is itself a phased-in process. The RCW Standards and Guidelines will not be in effect, and the permanent HMAs will not be designated, until each affected forest amends or revises its forest plans. Until such amendment or revision, tentative HMAs and standards and guidelines applicable to them shall be in effect.

Furthermore, the standards and guidelines for the permanent HMAs allow for actions that in effect phase in the changes required by this decision. Sub-HMAs, MILs, pine restoration (which may be accelerated in some instances), thinning to reduce southern pine beetle risk and reduced foraging habitat in some situations will mitigate economic impacts. See FEIS, Chapter 2, Alternative E.

There is a limit to the phasing of RCW management, however. One of the four primary causes of RCW population declines is a shortage of suitable cavity trees (see Shortage of Cavity Trees, FEIS, page 14). Suitable cavity trees are generally older aged pines, 80-90 years old or older. A shortage of such trees can only be resolved through time by managing the forest in such a way that an adequate number of trees are allowed to reach such ages. In other words, we must start now to create suitable habitat for future populations.

Suitable foraging habitat must be available also. Suitable habitat must exist before population increases can occur: we cannot wait until the target populations are reached before designating HMAs, and we cannot annually increase the acreage as populations increase.

3. **Evaluate economic impacts of proposed management changes at the local and state level.** The accompanying FEIS contains an economic analysis of impacts at the state level (see FEIS Appendix F). It is very difficult to analyze economic impacts at the community level when dealing with a regional programmatic document such as this FEIS. Local economic effects will be addressed during forest plan amendment or revision.

The values given in the economic analysis are not intended to be absolute. There are too many variables such as stumpage values, other species and other resource coordination which can change over time to allow the calculation of very accurate predictions. I did consider economic impacts when deciding which alternative to implement. In addition, there are several elements of the proposed action which mitigate the economic effects (see previous section on phasing in management changes).

4. **An agency must evaluate its financial ability to implement changes in management.** The proposed RCW management strategy is designed to conserve and recover an endangered species. It is based on the biological needs of the RCW. The FEIS projects an annual cost of \$15 million per year for the first 10 years to fully implement the proposal. If funding is not available at this higher level to fully implement this direction, the rate of implementation will be slowed and the long-term conservation and recovery of the RCW will be delayed. Given the number of existing RCW, management efforts will initially be concentrated around existing birds and then expanded as populations increase.

It is critical to point out that eliminating three of the four primary reasons for population declines have little or no cost associated with them (see primary reasons for population declines, FEIS page 13). The majority of the cost is prescribed burning to control midstory vegetation, which can realistically be phased in. In addition, prescribed burning cost will likely decrease over time as fuel loadings are reduced.

V. REASONS FOR THE DECISION

Resource conditions, public preferences, analyses, and research findings were factors in my decision. I used the following principles for guidance:

Comply with laws and regulations

Within the biological needs for recovering the RCW, consider the well-being of people

Use the best and most recent information and research to guide our actions

Give managers the flexibility to make reasonable and prudent decisions at the Forest Plan and project level, to address social and economic issues, but provide standards that will ensure, to the greatest degree practicable, conservation and recovery of the RCW.

Respond to public issues

In this decision, I believe the public and environment will receive the highest benefits by:

Moving the forests toward more ecologically sound management within HMAs by focusing on those aspects of ecosystem structure, composition, and function that are similar in all the various ecosystems occupied by the RCW.

Allowing clearcutting primarily for restoration where it is the optimal regeneration method.

Improving habitat for a large number of other PETS species as well as numerous game and non-game species.

Minimizing adverse impacts on most dependent species while increasing the likelihood of recovery for RCW recovery.

Providing a long-term sustained yield of forest products to address economic stability and cost efficiency of timber operations while increasing the likelihood of RCW recovery.

Minimizing impacts on oil and gas exploration and development while increasing the likelihood of RCW recovery.

Minimizing impacts to forest recreation, especially off-road vehicle and wilderness users, while increasing the likelihood of RCW recovery.

Maintaining air quality.

Why Alternative E was Selected

I selected Alternative E as modified because I believe it is the one alternative that provides an equal or better opportunity among the alternatives analyzed to avoid jeopardy and to recover the RCW while still allowing for multiple use management of the National Forests. When considering any proposed action within an HMA, whether it be a timber harvest or a new hiking trail, our land managers must ask two questions:

1. Can we implement this proposed action without adversely affecting RCW?
2. Will there be a short or long-range benefit to RCW and other Forest uses as the result of this action?

An affirmative answer is mandatory for the first question. If the proposed action is likely to adversely affect RCW, it will not be considered further. However, since we manage the National Forest for multiple uses, there will be occasions when we can answer the first question "yes" but since the primary benefit is aimed at another resource management objective, question 2 may have a negative reply. The previously mentioned hiking trail within the HMA but outside a cluster would be an example of a project that may go forward despite a negative answer to question 2. **Any proposed action relating to timber management activities requires an affirmative response to both questions.**

In making this decision, I carefully considered the analysis in the FEIS and the determination in the Biological Assessment that Alternatives A (no action), B and D "may adversely affect RCW" (BA 25). Although we have concurrence from the US Fish and Wildlife Service (FWS) that Alternative A (the Interim Standards and Guidelines) is not likely to adversely affect RCW, that concurrence was given in 1990 with the understanding that the Interim Standards and Guidelines were an interim measure. We likewise received a non-jeopardy opinion from the FWS in 1985 on the Handbook, the basis of Alternative B. However, current knowledge of the demographic needs of RCW suggest that neither of these strategies which use a form of "circle" management, are capable of recovering the RCW, given existing conditions in most RCW populations (BA 24). The FWS in their May 19, 1995 letter of concurrence on the alternatives in the EIS, concurred with our determination that using the Interim Standards and Guidelines or the 1985 Handbook as the long-term strategy would jeopardize the RCW.

I selected Alternative E over Alternative D for a variety of reasons. First, the drastic measures of Alternative D are not necessary to recover the RCW. Our determination that Alternative D may adversely affect RCW by not ensuring habitat in some forest types over the long-term also was a consideration in the decision. The FWS did not concur with this determination because they believe natural forces will ensure regeneration through time in Alternative D.

The Forest Service conclusion that Alternative D's emphasis on leaving regeneration of the forest up to natural forces (except the restoration of desirable pine species for RCW) may result in a "boom and bust" of potential cavity trees (BA 25) will likely be questioned by some reviewers, as it was by the FWS. They will argue that the RCW got along quite well prior to the arrival of Europeans with natural forces regenerating the forests. This is certainly true, but habitat conditions have changed drastically.

The pre-Colombian longleaf pine forest, primary habitat of RCW, was a relatively contiguous belt of habitat running from Virginia around the Atlantic and Gulf coast to East Texas. This pine type alone comprised 60-90+ million acres of habitat for RCW.

We are proposing to manage approximately 2 million acres with emphasis on RCW. This 2 million acres is made up of various size tracts of National Forest ranging from 6,500 acres to an entire National Forest. Most tracts are widely separated from other National Forest tracts and are frequently isolated from suitable RCW habitat on other ownerships.

Therefore, I feel it is not prudent to leave the perpetuation of RCW habitat on these isolated tracts to chance. This is especially true in light of our having the management tools to ensure perpetuation of RCW habitat, while yielding ecological systems which more closely resemble pre-Colombian conditions than currently exist.

I selected Alternative E over Alternative D because actual on-the-ground management over the next several decades will differ very little, if any, between the two. Both alternatives stress the restoration of pine species desirable to the RCW, especially longleaf. Although Alternative E does allow for a sustained flow of forest products over time, it emphasizes restoration of desirable pine species before other pine regeneration takes place. Changes to Alternative E from the DEIS represent an estimated increase in volume of 66 million board feet per year for the first 10 years, which related to an increase in jobs of 600 and a 4 million dollar increase in receipts to States annually.

Given the constraints placed on pine restoration, to avoid habitat fragmentation and cluster isolation, it will take several decades to accomplish the desirable restoration on most National Forests. Therefore, the levels of regeneration cutting will be essentially the same under both alternatives. If one also takes into account that most RCW experts are of the opinion the species will either be well on its way to recovery or lost in the next 20-30 years, the position that Alternative D is best for recovery of RCW becomes moot.

I selected Alternative E over Alternative C for a variety of reasons. Alternative C bases timber rotations on site quality. Higher quality sites have longer rotations; for example longleaf and shortleaf pine rotations range from 100 to 200 years depending on site. This approach was based on a theory that longer lived species growing on good sites (site index of 90 and above) develop heartwood at a slower rate. Research conducted on the rate of heartwood development in longleaf and loblolly pine indicates, however that heartwood develops proportional to the growth rate of the tree. In reality the faster growing trees on good sites develop heartwood faster than slower growing trees on poor sites.

Analysis of the age of existing cavity trees in longleaf and loblolly pines indicated the majority of cavity trees in these pine species were over 100 years and 80 years respectively. This analysis in conjunction with the previously mentioned heartwood study resulted in the recommended minimum rotations used in Alternative E. These rotations will allow approximately 25 percent of the pine and pine-hardwood forest within HMAs, but outside clusters, replacement or recruitment stands, to be potential cavity trees at any point in time.

If one also considers the substantial number of trees which will remain in irregular shelterwood regeneration areas to become truly old, the question of rotation almost becomes moot. For example, within a 200 acre longleaf home range there may be approximately 3500 potential cavity trees at any point in time using a 120 year rotation.

Some question the need for this many potential cavity trees. We do know one of the key limiting factors on RCW is the lack of potential cavity trees. We also know that only time can create old trees. Therefore, if we are to err, we will err on the high side with respect to numbers of old trees.

Some reviewers of the DEIS preferred Alternative C because of the potentially longer rotations. Many, however, failed to recognize that significant acreage of both longleaf and shortleaf pine within tentative HMAs is growing on poor sites. Alternative C would allow shorter rotations on many more acres than is allowed under Alternative E. These shorter rotations on poor sites is the reason the difference in available volumes differ so little between Alternatives C and E in the third 10 year period.

I selected Alternative E over Alternative C because I believe management under Alternative E will result in healthier forest ecosystems. Alternative E allows thinning to reduce southern pine beetle hazards even if foraging habitat is limited in areas of moderate to high risk of infestation. The combination of reducing foraging habitat for recruitment stands in unoccupied habitat and increasing the amount of habitat allowed in the 0-10 and 0-30 age classes, will allow for an expedited rate of restoration with Alternative E.

Reducing the number of trees per acre for species susceptible to southern pine beetle (primarily loblolly and shortleaf pine) and increasing the rate of restoration of species less susceptible to southern pine beetle (primarily longleaf pine) will improve forest health.

Also, as with Alternative D, actual on-the-ground management will differ little between Alternatives E and C the first few decades due to emphasis on restoration of desirable pine species for RCW.

Finally I selected Alternative E because I believe it best meets the intent of the laws and regulations governing Forest Service operations and mission especially in regards to:

1. The Endangered Species Act. 16 U.S.C. 1531 et seq.
2. The National Forest Management Act. 16 U.S.C. 1600 et seq.
3. The Multiple-Use Sustained Yield Act. 16 U.S.C. 528 et seq.

What the New RCW Management is Not

Three common misconceptions about the new RCW management direction are: the HMAs are a set-aside, it is single species management, and it is a sudden and drastic change in management direction. That is not the situation.

The new RCW management direction will place approximately two million acres of pine and pine-hardwood forest within HMAs. The HMAs are not a two million acre set-aside. Except for the acres included in clusters, replacement and recruitment stands which represent approximately 8% of the two million acres, the HMAs will be managed to produce the full range of multiple uses, including a sustained flow of forest products. Changes in management direction, primarily extension of rotations, will result in some volume reduction. However, the same extension of rotations will result in higher quality sawlogs, especially in the longleaf forest type.

The new RCW management direction is not single species management. Although driven by the needs of the endangered RCW, the over-all management direction is designed to create habitat that more closely resembles conditions once common in the fire dependent pine ecosystems of the southeast. The proposed management direction will benefit 177 proposed, endangered, threatened, and sensitive (PETS) species as well as game and non-game species occurring in RCW habitats (ROD, pgs. 11-16).

Neither is the new RCW management direction a sudden and drastic change in management on the affected National Forests. The Forest Service has been formally involved in RCW management since 1975. Between 1975 and 1985 the management direction changed three times. Each time it got progressively more specific (these changes are described in the FEIS at pages xxxii-xxxviii and in this ROD on page 2 of Appendix B).

In 1989, when it became obvious most RCW populations on National Forests were declining another series of management changes began, starting with the March 27 Policy, Interim Standards and Guidelines, and the new management direction described in the accompanying FEIS. Again, each change was progressively more specific. Therefore, the proposed management has been evolving and phasing in over a period of years.

VI. IMPLEMENTATION

The decision described in this ROD will become effective no sooner than 30 days from the date the Environmental Protection Agency's Notice of Availability of the Final Environmental Statement appears in the Federal Register.

As previously described, implementation of the new RCW management direction is divided into two elements.

- (1) The RCW Chapter of the Regional Wildlife Habitat Management Handbook (Handbook) is revised with the "Regional Standards and Guidelines" Appendix A, ROD and the Southern Regional Guide is amended to incorporate the revised Handbook chapter.

A later action under this element will be the amendment/revision of the 11 affected Forest Plans to incorporate the revised Handbook chapter. All affected Forest Plans must be amended/revisioned to fully incorporate the revised chapter within three (3) years of the date of this decision.

- (2) The 11 affected Forest Plans are amended to identify and delineate tentative Habitat Management Areas (HMAs) and establish tentative population objectives. Within these tentative HMAs, but outside the 3/4-mile radius circles, where Interim Standards and Guidelines will remain in effect, current Forest Plan standards and guidelines will remain in effect, except that only the following silvicultural systems and practices are allowed:

Thinning

Irregular shelterwood method (two-aged) leaving a minimum of 40 square feet of basal area per acre.

Single-tree and group selection methods (uneven-aged)

Clearcutting (even-aged) could be allowed to restore longleaf or other desirable pine species on appropriate sites. If a Forest chooses to begin restoration during the transition period between the date of this ROD and their Forest Plan amendment or revision, the Forest must first identify sufficient recruitment stands and foraging habitat to meet their tentative population objective established in Table 2-E1 of this FEIS.

The tentative HMAs and accompanying direction will remain in effect until individual Forest plans are amended/revisioned to incorporate the revised RCW Handbook Chapter.

Within tentative HMAs, some ongoing timber sales or sales planned to be advertised by September 30, 1995, are not completely consistent with the direction in this ROD. However, these sales have been reviewed and are part of our Biological Assessment, which has undergone section 7 consultation with FWS and is part of their Biological Opinion. (See the timber sale appendix of the Biological Assessment for a complete list of affected sales). These listed sales may continue based on the consultation and FWS's concurrence that these sales are not likely to jeopardize the RCW.

National Forests in Texas Situation

The National Forests in Texas continue to be subject to the District Court orders in the Texas case (see *Sierra Club v. Lyng*, 694 F. Supp. 1260 (E.D.Tex. 1988), as modified October 20, 1988) affirmed in part, vacated in part "*Sierra Club v. Lyng* (Glickman) is 926 F. 2d. 429 (5th Cir. 1991)" and District Court Order of March 24, 1994. "The National Forests in Texas are included in this decision. However, these forests continue to be subject to the above court orders. Therefore, unless and until the outcome of the litigation allows the Forest Service to implement the entirety of this direction, only those aspects of this decision that do not conflict with those orders may be implemented at this time. Specifically those items are:

1. Monitoring guidelines that include trapping, handling, and banding of RCW.
2. Cluster improvement guidelines that recommend the expansion of the cluster size to 10 acres, from the FSH 2609.23 guide for a buffer of 200 feet around the nest trees.
3. Cluster protection guidelines that recommend predator control of snakes, flying squirrels, etc.
4. Cluster monumentation guidelines that recommend improvement from the FSH 2609.23 guidelines.
5. Cluster improvement guidelines that recommend installation of artificial cavities as needed.
6. All guidelines for implementation of Habitat Management Area (HMA) on land outside the 1200 meter (3/4 mile) zones as identified in the Forest Land Management Plan by Amendment or revision.

The tentative HMAs and accompanying direction will remain in place until the Forest Plan for the National Forests in Texas is revised to incorporate the Revised Handbook.

All ongoing sales (see Biological Assessment for listing) within tentative HMAs in Texas may also proceed with the guidance as stated above as long as they are within the direction of the existing District Court orders.

SECTION 7 CONSULTATION

This decision has been made with the benefit of a May 1, 1995 non-jeopardy biological opinion from the USDI Fish and Wildlife Service (FEIS Appendix H). The biological opinion addressed a procedure for ESA Section 7 consultations during the period between the issuance of this ROD and Forest Plan amendments or revisions.

Consultation under Section 7 of the Endangered Species Act will also occur when each Forest Plan is either amended or revised. Until plans are amended or revised, projects will use the May 1, 1995 Opinion to meet Section 7 consultation, in situations where "not likely to adversely affect" determinations are made by Forest Service Biologists.

In their Opinion, the FWS concurred that there is considerable time savings to be gained under interagency Section 7 consultation, with no loss of necessary biological effects analysis, if certain conditions apply, and if future consultations refer to the May 1, 1995 Opinion for Section 7 concurrence.

In the Biological Opinion the FWS agreed consultation will not be needed for any project in a tentative HMA including translocation, restrictors, monitoring, prescribed fire, midstory control, thinning, timber sales, etc., if: (1) the project is in accordance and compliance with the RCW Record of Decision and the Biological Opinion, and (2) a biological evaluation determination of effect for RCW of "not likely to adversely affect" is documented for the project. If Forest Service project biological evaluations determine a "likely to adverse effect" situation, formal consultation will be necessary.

This process still requires that an appropriate review be done of project effects to the RCW, but it will result in a very significant savings in time by both the Forest Service and the FWS. This process will be in effect for projects within tentative HMAs until the RCW Standards and Guidelines are incorporated into Forest Plans through an amendment or revision.

Numerous ongoing and prepared timber sale projects have been reviewed for compliance with Section 7 consultation procedures and direction given in this decision. A listing of these sales is given in the April 5, 1995 Supplemental Biological Assessment (Appendix H, FEIS). The FWS has considered these projects during the consultation on the RCW Standards and Guidelines, and based on their opinion, I have decided to allow these sales to continue.

These section 7 consultation criteria apply only to the RCW. If other federal listed or proposed species occur in the project area, appropriate section 7 consultation must occur.

The FWS biological opinion listed several reasonable and prudent measures, and terms and conditions which will be implemented as part of the selected alternative. The reasonable and prudent measures, and terms and conditions are very specific and deal with personnel training and certification, permits and specific actions involving translocation, artificial cavities, and reporting. (For specifics see pgs. 156-162 of Appendix H, FEIS or Appendix N of the ROD.)

VII. NFMA FINDING OF NON-SIGNIFICANCE FOR AMENDMENT OF REGIONAL GUIDE AND FOREST PLANS

Under the National Forest Management Act (NFMA) (16 U.S.C. 1604(f) (4) Regional guides and forest plans must "be amended in any manner whatsoever after final adoption and after public notice, and, if such amendment would result in a significant change in such plan, in accordance with subsections (e) and (f) of this section and public involvement comparable to that required in subsection (d) of this section." The NFMA regulation at 36 CFR 219.10(f) states: "Based on an analysis of the objectives, guidelines, and other contents of the forest plan, the Forest Supervisor shall determine whether a proposed amendment would result in a significant change in the plan. "Neither NFMA nor its implementing regulations define the term "significant". The regulations permit the Forest Service to determine whether or not the proposed amendment will be significant.

Under NFMA and its regulations, an amendment that does not result in a significant change in a forest plan must be undertaken with public notice and appropriate NEPA compliance. If a change to a forest plan is determined to be significant, the Regional Forester must follow the same procedure required for the development of the forest plan, including preparation of an EIS.

Record of Decision

The Forest Service Land and Resource Management Planning Handbook (FSH 1902. 12) provides more detailed guidance for exercising this discretion. This guidance offers a framework for consideration, but does not demand mechanical application. No one factor is determinative and the guidelines make clear that other factors may be considered.

Under section 5.32, FSM 1909.12 lists four factors to be used when determining whether a proposed change to a forest plan is significant or not significant: timing; location and size; goal, objectives, and outputs; and management prescriptions. It also states that "[o]ther factors may also be considered, depending on the circumstances." The determination if a proposed change to a forest be significant or not depends on an analysis of all of these factors. While these factors are to be used, they do not override the statutory criterion that there be a significant change in the plan. Basically, the decision-maker must consider the extent of the change in the context of the entire plan affected, and make use of the factors in the exercise of his or her professional judgement. The Forest Service has carefully evaluated the RCW Standards and Guidelines and concluded that it does not constitute a significant amendment of the Southern Regional Guide and 11 forest plans in the states of Texas, Louisiana, Mississippi, Arkansas, Alabama, Georgia, Florida, South Carolina, North Carolina, Tennessee, and Kentucky.

Timing

The timing factor examines at what point, over the course of the forest plan period, the plan is amended. Both the age of the underlying document and the duration of the amendment are relevant considerations. The handbook indicates that the later in the time period, the less significant the change is likely to be. All of the forest plans here are at least half-way or more through the first planning period. Even so, the second element of the direction will be in place for only 1-3 years until the plans are further amended or revised. As noted in the ROD (page 1), the action is limited in time. The fact that the complete Regional Standards and Guidelines will not be fully incorporated in the Forest Plans until they are further amended or revised, supports the determination that they do not constitute significant amendments of the Regional Guide and 11 Forest Plans.

Location and Size

The key to the location and size is context or "the relationship of the affected area to the overall planning area" (FSH 1909.12, sec. 5.32(d)). As further discussed in FSH 1909.12, sec. 5.32(d): "the smaller the area affected, the less likely the change is to be a significant change in the forest plan." As discussed in the ROD (pgs. 1 and 2), the second element of this decision only applies to the tentative HMAs and only applies certain restrictions on harvest methods within those areas. The size of the area affected is rather small when compared to the overall planning area of the 11 affected Forests.

The appropriate inquiry when considering the significance of plan amendments is the change made on each Forest, and not the cumulative change on all the involved Forests. The cumulative change on all the involved Forests is assessed to determine whether the amendment of the Regional Guides is significant. In both cases, the areas in the planning unit affected by the Regional Standards and Guidelines is not so large in size as to mandate a significant amendment.

Goals, Objectives, and Outputs

The goals, objectives, and outputs factor involves the determination of "whether the change alters the long-term relationship between the levels of goods and services in the overall planning area" (FSH 1909.12, sec. 5.32(c)). This criterion concerns analysis of the overall forest plan and the various multiple use resources that may be affected. There is no guarantee under NFMA that output projections will actually be produced. As discussed in the ROD (pgs. 1 and 2) and the FEIS the immediate decision would apply only to tentative HMAs for a period of 1-3 years. Thus, this immediate action does not significantly alter the long-term relationships between the levels of goods and services projected by the forest plans. For example, the effects on timber supply and other commodity resources are relatively small. The second element of this decision is merely additional management to not jeopardize the RCW and to aid in its conservation and recovery. By designating tentative HMAs and adopting direction applicable to these areas now the Forest Service is better able to achieve its goals of managing the National Forests for sustainable multiple uses, while ensuring protection of the RCW to aid in recovery and conservation of the species.

The process of adapting forest management to changing social and environmental conditions is not finished. The further amendments and revision of individual Forest Plans will address the long-term specific effects of these Regional RCW Standards and Guidelines to each National Forest.

Management Prescriptions

The management prescriptions factor involves the determination of (1) "whether the change in a management prescription is only for a specific situation or whether it would apply to future decisions throughout the planning area" and (2) "whether or not the change alters the desired future condition of the land and resources or the anticipated goods and services to be produced" (FSH 1909.12, sec. 5.32(d)).

The desired future conditions and long-term levels of goods and services projected in current plans would not be substantially changed by the RCW Standards and Guidelines and the second element. The decision will work to accomplish an element of the multiple use desired future condition of the Southern Regional Guide and forest plans by providing for additional protection of the RCW. The "anticipated goods and services" will not be greatly affected by the decision. The RCW direction only affects HMAs where selected projects are occurring or may be proposed and does not alter the management framework for overall planning areas covered by these plans. Essentially, this direction provides additional protection for the RCW until the overall direction and RCW Standards and Guidelines can be fully incorporated in the individual Forest Plans as part of the long-term strategy and direction for each Forest planning area.

Other Factors

It is crucial that the agency be able to respond to scientific information and changing environmental conditions. By responding to changing circumstances, the Forest Service will be better able to manage the National Forests for multiple use resources and assure a continuous supply of goods and services from the National Forests for the long term.

These are other factors to consider in determining whether an amendment is significant.

In the case of the new RCW direction, the "other factors" include the ability of the Forest Service to adapt to changing conditions and additional protection for the RCW as well as other threatened, endangered and sensitive species until the long-term RCW Standards and Guidelines can be incorporated into each Forest Plan. By taking this step of adopting a two-phase approach, the Forest Service is better able to achieve its goals of managing the National Forests for sustainable multiple uses, while addressing the conservation and recovery of the RCW.

The process of adapting forest management to changing social and environmental conditions is not finished. The Forest Plan environmental impact statements will also analyze similar issues concerning environmental protection and commodity productions as they incorporate this long-term strategy.

Site-Specific Projects

The RCW Standards and Guidelines and immediate actions do not affect the continued implementation of those timber sale projects that are listed in the Biological Assessment that have been through Section 7 Consultation, under ESA. These listed sales may continue.

Responsibility

Under the authority of 36 CFR 2191.10(f), this decision amends the Southern Regional Guide and 11 forest plans (ROD, Appendix C-M). It creates tentative HMAs in all affected Forests and adds direction for harvest methods within these HMAs. It also replaces existing conflicting direction in these 11 Forest Plans related to the areas covered by the tentative HMAs in regards to RCW management.

The timber sales listed in the Biological Assessment may proceed without interruption. All other future decision documents for projects within tentative HMAs must contain a finding that the project is consistent with LRMPs as amended by this decision.

VIII. APPEAL RIGHTS AND APPROVAL

This decision may be appealed in accordance with the provisions of 36 CFR 217 by filing a written notice of appeal, in duplicate, within 90 days of the date of publication of the legal notice of availability for this decision. The appeal must be filed with the reviewing officer:

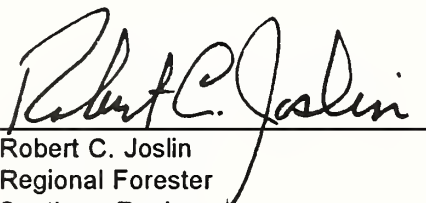
USDA Forest Service
Attn: NFS Appeals Staff/3NW
P O Box 96090
201 14th Street, SW
Washington, DC 20090-6090

The notice of appeal must include sufficient narrative evidence and argument to show why this decision should be changed or reversed (36 CFR 217.9).

Record of Decision

If you would like more information on the this Record of Decision or FEIS, please contact:

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RCW EIS Team Leader
1720 Peachtree RD., NW, Room 816N
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(404) 347-4338


Robert C. Joslin
Regional Forester
Southern Region
USDA Forest Service

6/21/95
Date

Appendices

RCW MANAGEMENT STANDARDS AND GUIDELINES

APPENDIX A

RECORD OF DECISION

FEIS for the Management of the Red-cockaded Woodpecker and its Habitat in the Southern Region

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INTRODUCTION

The following RCW Management Standards and Guidelines (S&G) are the specific direction approved by the Regional Forester for management of the red-cockaded woodpecker and its habitat on National Forest System lands in the Southern Region. It is Alternative E of the Record of Decision for the RCW Final Environmental Impact Statement (FEIS). It is the revised RCW Handbook chapter, replacing the 1985 RCW Chapter in the Wildlife Habitat Management Handbook (FSH 2609.23R). Although presented in a different format, it retains all the pertinent topics of the original Handbook.

The RCW FEIS is, by necessity, a very complex document. Fortunately instructions for actual implementation of the proposed action can be presented in a much less complex format. The purpose and intent of the Standards and Guidelines are to provide Forest Service personnel with a very concise set of management direction. They are intended to be user-friendly, to address situations likely to be encountered by those applying the Forest Service's RCW Management Strategy (RCW Strategy).

The Standards and Guidelines are presented in six major Sections:

1. An outline, presented in the form of a dichotomous key, of steps to be taken when analyzing a proposed project in relation to the Standards and Guidelines. At the various steps the user may be referred to other portions of the S&G for more specific information or guidance. This key is not intended as a summary of the S&G. It is intended only as an aid to minimize the time and effort required during project analysis.
2. A summary of the process described in Appendix A of the FEIS to delineate Habitat Management Areas (HMA) and establish population objectives. This section also includes direction to determine which management intensity level (MIL) shall be assigned to each population/ sub-population and the criteria to delineate sub-habitat management areas (sub-HMA).
3. Definitions of and selection criteria for clusters, replacement and recruitment stands are presented. Also included are RCW management and protection activities which may occur within clusters, replacement and recruitment stands. Most management/protection activities are constant regardless of which MIL a population is in. However, any differences by MIL are clearly identified.
4. Activities which may occur within HMAs but outside clusters, replacement and recruitment stands to provide a sustained flow of RCW habitat. It includes silvicultural guidelines which are addressed by forest type (except for Thinning). It also clearly identifies the variation in guidelines by MIL.
5. The monitoring plan, which shall be used to determine the effectiveness of the RCW Strategy.
6. A summary of standards and guidelines that apply immediately to the Tentative Habitat Management Areas.

Information in Sections 2 through 6 is presented in a standards and guidelines format. The reasons that support the various activities can be found in the FEIS and the text of the Record of Decision.

Until Forest Plans are revised or amended to incorporate Sections 1-5, policies to currently be applied to the ground are the Forest Service's "1990 Interim Standards and Guidelines for the Protection and Management of Red-cockaded Woodpecker Habitat Within 3/4 mile of Colony Sites", and Section 6 of this document.

SECTION 1 - KEY TO APPLICABLE STANDARDS AND GUIDELINES FOR HMAs

STEP 1 - Is the proposed project within a delineated RCW habitat management area (HMA)?

NO, the RCW Management Standards and Guidelines (RCW S&G) does not apply.
YES, the RCW S&G applies, go to STEP 2.

STEP 2 - Does the proposed project involve pine or pine-hardwood habitat?

(Does not apply to sand pine or white pine; does apply to hardwood-pine habitat on the Daniel Boone NF.)

NO, the RCW S&G does not apply.
YES, the RCW S&G applies, go to STEP 3.

STEP 3 - Does the proposed project involve a cluster, replacement or recruitment stand?

NO, go to STEP 4.
YES, STOP - only activities that will enhance or protect RCW nesting habitat can occur in clusters, replacement or recruitment stands. See Section 3 for guidance.

STEP 4 - Is the proposed project within 1/4 mile of an active cluster and in a population identified as MIL 3 or 4?

NO, go to STEP 6.
YES, go to STEP 5.

STEP 5 - Does the proposed project include regeneration cutting other than uneven-aged management, or permanent forest clearings for other than silvicultural purposes?

NO, go to STEP 6.
YES, STOP - project IS NOT in compliance with the RCW S&G.

STEP 6 - Does the proposed project involve even or two-aged regeneration cutting in the oldest 1/3 of the pine or pine-hardwood acres within the HMA that has not reached rotation age?

NO, for even-aged management go to STEP 7; for uneven-aged management go to STEP 9.
YES, STOP - project IS NOT in compliance with the RCW S&G.
Note: See Section 4.3 for an exception to this restriction which may be allowed on a site specific basis.

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STEP 7 - Following completion of the proposed project will the HMA have more than the allowed percentage, based on rotation length, of the pine or pine-hardwood acres being managed with even-aged management systems in the 0-10 age class? See Section 4.8.1 for prescribed rotations.

NO, go to STEP 8.

YES, STOP - project is not in compliance with the RCW S&G.

Note: See Sections 2.3, 4.8.1 and 4.8.5 for specific situations where this age class restriction may be exceeded.

STEP 8 - Following completion of the proposed project will the HMA have more than the allowed percentage, based on rotation length, of the pine or pine-hardwood acres being managed with even-aged management systems in the 0-30 age classes?

NO, go to STEP 9.

YES, STOP - project is not in compliance with the RCW S&G. See Sections 2.3 and 4.8.5 for specific situations where this age class restriction may be exceeded.

STEP 9 - Following completion of the proposed project will there be sufficient foraging habitat equivalents to support the active clusters and recruitment stands involved? See Section 4.1 for required foraging equivalents.

NO, STOP - project is not in compliance with the RCW S&G. See Section 4.2 for specific situations where foraging equivalents may be reduced below that required.

YES, go to STEP 10.

STEP 10 - After completion of a spatial analysis of the proposed project will there be adverse impacts associated with fragmentation of foraging habitat, isolation of clusters, replacement and recruitment stands from their foraging or from each other, age class distribution (spatial arrangement of age classes), or availability of short-term nesting habitat? See Sections 3.2 and 4.8.3 for guidance.

NO, go to STEP 11.

YES, STOP - project is not in compliance with the RCW S&G.

STEP 11 - The project can proceed, given proper ESA Section 7 and NEPA compliance and documentation.

SECTION 2 - HMA DELINEATION

This section presents a summary of the process described in Appendix A of the FEIS to delineate Habitat Management Areas (HMAs) and establish population objectives. It also includes direction to determine which Management Intensity Level (MIL) shall be assigned to each population/ sub-population and the criteria to delineate sub-HMAs.

2.1 HMA Delineation and Setting Population Objectives

The HMA delineation process is rather complex and is described in detail in Appendix A of the FEIS. It was decided to not include that process in these Standards and Guidelines. Following is a brief summary of some of the key points concerning HMA delineation and setting population objectives, with reference to page number(s) in Appendix A for additional information or guidance.

An HMA must be established for all RCW populations on national forest lands that have one or more breeding pairs.

Generally all active clusters must be included within an HMA. See the FEIS, Appendix A, pages A-2 and A-3 for guidance on the two situations where active clusters may be excluded from an HMA.

Delineation of HMAs is based on the distribution of existing active and inactive clusters (see Appendix A, page A-8), therefore it may contain more acres of suitable and potentially suitable habitat than needed to support the minimum required population.

Population objectives will generally be based on RCW density objectives (FEIS Appendix A, Table A-3) which vary by physiographic province. However, within physiographic provinces there is also variability in habitat capability based on ecological factors associated with individual landscapes. Because of this variability, each affected National Forest will refine the tentative population objectives established in the FEIS for each HMA, and establish final population objectives during their Forest Plan amendment/revision process. These refinements will be based on the following:

- Acres of suitable and potentially suitable RCW habitat within permanent HMAs.

- Locally determined RCW density objectives for individual landscapes within a given HMA.

- Desired future condition of these landscapes based on land type associations.

Generally population density objectives shall fall within the range of one group per 200 to 300 acres. However it is recognized that some landscapes within a given HMA may require more acres per group. For example, wet site loblolly pine-hardwood may require 400 acres and pond pine (poorly drained pocosins) may require as much as 600 acres. **No usable habitat within an HMA should be excluded from RCW management regardless of acres required to support a group.**

USDA Forest Service RCW Management Standards and Guidelines

If an HMA delineated per the instructions in the FEIS, Appendix A would contain less than the amount of potentially suitable habitat to support the required minimum population, it must be expanded to include adequate acreage of suitable habitat to support that population.

The HMA for a support population must be large enough to support a minimum of 50 RCW groups. See the direction above for determining population objectives to determine required acres of suitable habitat.

The HMA for a recovery population must be large enough to support 500 RCW groups if the land base is sufficient. See the direction above for determining population objectives to determine required acres of suitable habitat. If the land base is not sufficient, all suitable and potentially suitable pine and pine-hardwood types will be included within the HMA. See the FEIS, Appendix A, page A-17 for examples of areas that may be excluded.

If no active clusters occur within a subpopulation/population see the FEIS, Appendix A, page A-16 for guidance.

If an active cluster should be found outside an HMA immediate action would require establishment of a 3/4 mile radius circle around it with management the same as inside the HMA. Longer term objective shall be to lure the RCW into the HMA through establishment of a recruitment stand, midstory control and artificial cavities.

2.2 Management Intensity Levels (MIL)

Each HMA and RCW subpopulation/population will be assigned to one of four MILs, based on risk of extirpation which is determined by the size and trend of each population. Populations in the different MILs will receive varying levels of management with the smaller populations receiving the most intensive protection/management (MIL4).

Depending on monitoring intensity, either the number of potentially breeding pairs or total active clusters can be used to determine which MIL a population should go into.

Two sets of MIL classification criteria were developed (Tables A-1 and A-2). One is for recovery populations with a land base large enough to support 500 or more groups. The second is for recovery populations with inadequate land base or support populations which have population objectives less than recovery level.

When determining the initial MIL for a population or in order for a population to move to the next lowest MIL, the trend must be supported by at least 5 years of monitoring data, i.e., to say the population is increasing, the overall population trend must have been positive for the previous five years. MIL ranking should be evaluated annually based on this five year running average.

Any population reduction equal to or greater than 10 percent of the highest population experienced in the previous five years would require being assigned to a more intensive MIL.

Table A-1**MIL Criteria for RCW Populations with Land Base to Support 500 Groups**

Potential breeding pairs or active clusters should be used when lacking accurate reproduction data to determine MIL for a population or subpopulation.

Management Intensity Level (MIL)	Reproducing Population	Potential Breeding Pairs	Active Clusters
<u>MIL 1 (Recovered/Low risk)</u> A population size of: with a stable or increasing population trend.	≥ 250	≥ 400	≥ 500
<u>MIL 2 (Moderate risk)</u> A population size of: with a decreasing population trend: or	> 250	≥ 400	≥ 500
A population size of: with a stable or increasing population trend.	125-249	200-400	250-499
<u>MIL 3 (Severe risk)</u> A population size of: with a decreasing population trend; or	50-249	80-399	100-499
A population size of: with a stable or increasing population trend.	25-124	40-199	50-249
<u>MIL 4 (Extreme risk)</u> A population size of: regardless of trend; or	≤ 25	≤ 40	≤ 50
A population size of: with a decreasing population trend.	25-49	40-79	50-99

USDA Forest Service RCW Management Standards and Guidelines

Table A-2

MIL Criteria for RCW Populations Without Land Base to Support 500 Groups

The percentages represent a percentage of the HMA's population objective in total active clusters, potentially breeding pairs or reproducing population. Two assumptions are made: The population objective in these HMAs will always be expressed as total active clusters, and the minimum population objective will be 50 active clusters.

Management Intensity Level (MIL)	Reproducing Population	Potential Breeding Pairs	Active Clusters
<u>MIL 1 (Recovered/Low risk)</u> A population size of: with a stable or increasing population trend.	≥ 50%	≥ 80%	≥ 100%
<u>MIL 2 (Moderate risk)</u> A population size of: with a decreasing population trend: or A population size of: with a stable or increasing population trend but not less than 50 groups.	≥ 50%	≥ 80%	≥ 100%
	25%-49%	40%-80%	50%-99%
<u>MIL 3 (Severe risk)</u> A population size of: with a decreasing population trend but not less than 50 groups; or A population size of: with a stable or increasing population trend but not less than 50 groups.	10%-49%	16%-79%	25%-99%
	5%-25%	8%-40%	25%-49%
<u>MIL 4 (Extreme risk)</u> A population size of: regardless of trend; or A population size of: regardless of trend but not less than 50 groups.	≤ 25	≤ 40	≤ 50
	5%-10%	8%-16%	< 25%

2.3 Sub-Habitat Management Areas

The sub-habitat management area (sub-HMA) strategy is intended to allow additional management flexibility in HMAs which are quite large, but currently have very few active clusters. Implementation of the sub-HMA strategy requires Regional Forester approval as part of a Forest Plan revision or amendment.

The sub-HMA is the area within the HMA that currently has active RCW clusters. It must be large enough to support a minimum of 50 RCW groups (10,000-15,000 acres of suitable habitat).

To qualify for the sub-HMA strategy the total area of all sub-HMAs must be 60 percent or less of the total potentially suitable habitat within the HMA.

Sub-HMA(s) will be managed using MIL 4 guidelines.

The area within the HMA, but outside the sub-HMA, will be managed according to standards and guidelines established for populations in MIL 2:

Uneven-aged silviculture (single-tree and group selection) may be used in situations where tree species and site conditions allow and foraging habitat is not limited.

Even-aged silviculture (shelterwood and seed-tree, both with reserve trees) may also be used if foraging habitat is not limited.

In those portions of an HMA (but outside a sub-HMA) which are managed with even-aged or two-aged methods, use the following formula to determine allowable regeneration percentage, by forest type or management type, during the first 10-year period:

$$ARP = 1.2T/Old R + T/New R - P$$

Where:	ARP	=	Allowable Regeneration Percentage
	T	=	the time of each entry cycle, in years
	Old R	=	the old rotation length of forest/management type, in years
	New R	=	the new rotation length of forest/management type, in years
	P	=	Percent of sub-HMA currently in the 0-10 year age class

Example:	T	=	10 year cycle
	Old R	=	80 year rotation
	New R	=	120 year rotation
	P	=	17% of longleaf pine is in 0-10 year age class = .170

$$\begin{aligned} ARP &= 1.2 (10)/80 + 10/120 - .170 \\ ARP &= .150 + .083 - .170 \\ ARP &= .063 \end{aligned}$$

At present, 6.3% of the longleaf pine in the HMA (but outside the sub-HMA) may be regenerated.

Portions of an HMA managed with uneven-aged silvicultural systems are not included in the above calculations. See Section 4.8.2 for specific directions.

SECTION 3 - NEST HABITAT MANAGEMENT

This section contains definitions of and selection criteria for clusters, replacement and recruitment stands. Also included are RCW management and protection activities which may occur within clusters, replacement and recruitment stands. Most management/protection activities are constant regardless of which MIL a population is assigned. However, any differences by MIL are identified.

3.1 Definitions and Selection Criteria

A **cluster** is an aggregate of active and/or inactive cavity trees within 1500 feet of each other. The boundary of active and inactive clusters must be at least 200 feet from all cavity trees in the cluster, and encompass a stand not less than 10 acres in size.

Replacement stands are stands that will replace existing clusters as their cavity trees die. They are crucial for sustaining RCW populations, and shall be established for all active clusters.

The selection criteria include:

- At least 10 acres in size.
- Nesting suitability, considering stand age, forest type, availability of relicts. Inactive clusters may be designated as replacement stands.
- Distance to a cluster: replacement stand should be adjacent to the cluster if possible, and no more than 1/2 mile from it.
- Replacement stands should ideally be 20 to 30 years younger than the cavity trees in the cluster.
- Clusters within wilderness: replacement stands for essential RCW groups living in wildernesses not included in a HMA shall be established as close to the cluster as possible and not more than three miles from it, but located outside the wilderness boundary.
- Clusters on private land: replacement stands would not be established adjacent to clusters on private lands until the group has moved onto National Forest land.

Recruitment stands are stands that provide potential nesting habitat for RCW population expansion. They shall be established in each HMA where the population objective exceeds the current RCW population. Recruitment stands are optional in MIL 1. The number of recruitment stands shall, at a minimum, equal the HMA population objective minus the current number of groups in that HMA.

USDA Forest Service RCW Management Standards and Guidelines

The selection criteria include:

- At least 10 acres in size.
- Nesting suitability considering stand age, forest type, and availability of relicts.

The oldest available stands or younger stands with sufficient relicts shall be selected. Inactive clusters may also be designated as recruitment stands. Midstory control shall be completed. Recruitment stands may be improved by installing artificial cavities.

- Distance to a cluster: recruitment stands should lie within 1/4 mile to 3/4 mile from a cluster or other recruitment stands to ensure good spatial distribution and increase probability of colonization.
- Must have adequate foraging habitat connected to the cluster or recruitment stand.
- Clusters inside wilderness: recruitment stands for RCW groups living in wilderness, not included in a HMA, shall be located outside the wilderness boundary. This action would encourage the RCW population to extend itself away from the wilderness into the HMA where the clusters can be managed for its benefit. Wildernesses are excluded from HMAs unless the specific wilderness management plan can accommodate RCW management.
- Clusters on private land: recruitment stand(s) shall be established for RCW groups living on adjacent private lands within 3/4 mile of Forest Service System lands. These stands shall be located on National Forest lands as close to the cluster as possible. This action would encourage the RCW to move to Forest Service lands where cluster management can take place and the cluster can be counted as part of the HMA population objective.

The two preceding situations, clusters in wilderness and on private land, are unique in that recruitment stands are normally not established for existing groups. However, in these cases the objective is to entice the RCW to move to an area where they can be better protected and managed.

There is no set rotation for clusters, replacement or recruitment stands, and they will remain in place until they can no longer provide suitable nesting habitat, ie., until all cavity trees are gone and habitat has deteriorated to a point beyond which a cluster can be supported. Boundaries of these stands could change as new cavities are excavated or artificial cavities are installed.

3.2 Management of Clusters, Replacement, and Recruitment Stands

Clusters, replacement and recruitment stands will be actively managed to ensure long-term suitability as potential nesting habitat.

Clusters, replacement and recruitment stands shall be maintained in an open park-like condition with a basal area ranging from 60 to 80 square feet. A minimum tree spacing of 20 to 25 feet, to reduce southern pine beetle risk, is more important than actual basal area, especially in non-longleaf forest types.

3.2.1 Marking Cavity Trees and Cluster Boundaries (Monumentation)

All active and inactive cavity trees must be permanently marked for easy recognition and tagged with a specific cluster-cavity tree identification number. Check as part of the monitoring process, and update cavity tree markings, if needed.

The boundaries of clusters, and recruitment stands that contain cavities, must be marked when any project that would alter the habitat, such as timber harvest, road construction, etc., is planned within 1/4 mile of the cluster or recruitment stand. The marking of such boundaries may be temporary (signs or flagging tape) or permanent (painted bands).

3.2.2 Cluster Status and Database Management

A database will be maintained and updated annually. It will include the status category of all RCW clusters within the HMAs. The database will link monitoring and survey data to help identify areas where recruitment or replacement stands are needed.

Six cluster status categories (active, inactive, abandoned, historic, destroyed, and invalid) shall be recognized and tracked. The status categories are defined in the FEIS glossary.

Cavity trees shall be preserved in all categories except invalid. Special cluster management is **not** required for abandoned, historic, or destroyed clusters unless they are identified as replacement or recruitment stands.

Active clusters may be declared inactive if no RCW or signs of RCW are present. Table A-3 shows when an inactive cluster may be declared abandoned.

Table A-3

Abandoned Cluster Timetable

Inactive clusters in MIL 2 and MIL 3 with declining populations and all MIL 4 populations cannot be declared abandoned.

<u>MIL</u>	<u>Population Trend</u>	<u>Minimum Time (Years)*</u>
1	Stable or Increasing	5
2	Stable or Increasing	10
2	Decreasing	n/a
3	Stable or Increasing	10
3	Decreasing	n/a
4	Any	n/a

n/a: Cannot be declared abandoned

- * Site specific conditions may allow declaring a cluster abandoned earlier than shown. Such situations will be evaluated on an individual basis and require informal consultation with and concurrence by the U.S. Fish and Wildlife Service.

3.2.3 Midstory Vegetation Control

Midstory removal and control shall be completed in all clusters, replacement and recruitment stands outside of wilderness. Where RCW clusters in wilderness are to be managed, midstory removal and control should be completed.

Prescribed burning on a two to five year rotation is the preferred method to control midstory vegetation. In stands with dense, but small (less than two inches diameter) hardwood midstory more frequent burning may be necessary to achieve control.

In clusters, replacement or recruitment stands where hardwood midstory is too large to be killed by prescribed burning (greater than two inches diameter), the following methods may be used to remove midstory:

Mechanical methods such as a feller-buncher, hydro-ax, drum chopper, mulcher, shearing blade, etc.

Manual methods such as chainsaws, brush hooks, etc.

Herbicides applied by injection, hypo-hatchet, handsprayer, etc.

Or a combination of these methods.

Midstory removal/control will occur over the entire stand (10 acre minimum) designated as a cluster, replacement or recruitment stand.

USDA Forest Service RCW Management Standards and Guidelines

All hardwood midstory trees within a 50 foot radius of active and inactive cavity trees will be removed. An average of three selected midstory hardwoods per acre can remain throughout the remainder of the stand. Examples of desirable species to leave are dogwood, redbud, or other showy flowering species. However, no midstory treatment shall occur in natural hardwood areas, e.g., stream bottoms, which are within cluster boundaries unless absolutely necessary to maintain the viability of the RCW group.

Pine midstory shall be controlled before the trees (usually saplings and pole size trees) block access to cavity trees, potential cavity trees and line-of-sight between them. Pine regeneration should be retained where it does not interfere with cavity trees as previously described.

No more than 10 within-canopy hardwoods per acre can be retained in these stands.

Maintenance burns for clusters, replacement and recruitment stands which have already had midstory removed will receive priority.

Emphasize growing season burns in those habitats that were naturally maintained by growing season fire. After midstory is controlled and the native herbaceous vegetation re-established, burning during other seasons may also be used if it will prevent and control midstory encroachment.

3.2.4 Artificial Cavities

Artificial cavities shall be used in any RCW population, regardless of MIL, if suitable cavity trees are limited, i.e., less than four functional cavities per cluster.

Three type of cavities, drilled, inserts, or start holes, will be used, depending on the characteristics of available trees and the needs of a particular RCW group.

The procedures and methods specified by Taylor and Hooper (1991) and Allen (1991) will be used to construct or install cavities.

Only individuals experienced in the respective techniques may install artificial cavities.

Midstory vegetation must be controlled in conjunction with installation of artificial cavities.

The following priorities will be followed to schedule installation of artificial cavities:

- (1) Active clusters with a single cavity.
- (2) When needed to support augmentation of single bird groups.
- (3) Active clusters with fewer than four usable cavities.
- (4) Recruitment stands, which may be inactive clusters, with fewer than four usable cavities, and within one mile of an active cluster.

(5) Recruitment stands, which may be inactive clusters, with fewer than four usable cavities, and within three miles of an active cluster.

(6) Inactive clusters or recruitment stands more than three miles from an active cluster.

Table A-4 shows variation in artificial cavity requirements by MIL:

Table A-4

Artificial Cavity Requirements

Drilled start-holes are recommended in MIL 3 and MIL 4 in addition to completed drilled cavities or cavity inserts.

<u>MIL</u>	<u>Artificial Cavities</u>	<u>Specified Type</u>
1	Optional	As appropriate
2	Required	As appropriate
3	Required	Complete cavities plus >2 start holes
4	Required	Complete cavities plus >2 start holes

3.2.5 Minimizing Cavity Competition

Cavity restrictors will be used where needed to minimize cavity competition, and in conjunction with artificial cavities, to ensure that each RCW group has at least four functional cavities.

Restrictors should be placed on enlarged cavities and unenlarged cavities where experience shows cavity enlargement is likely. Use the following priorities to schedule installation of restrictors:

- (1) Active clusters with a single usable cavity.
- (2) Single bird groups with fewer than four usable cavities.
- (3) Active clusters with two to four usable cavities.
- (4) Inactive clusters with fewer than four usable cavities.
- (5) Active clusters with five to eight usable cavities.

Restrictors shall not be installed on cavities that have been enlarged internally to the point of being unusable by RCW.

Monitor restrictors to ensure proper installation and acceptance by RCW.

Maintain adequate levels of midstory control to create unsuitable habitat conditions for cavity competitors.

Install squirrel and snake excluder devices (non-lethal) as needed.

USDA Forest Service RCW Management Standards and Guidelines

Install nest boxes for competitors if analysis indicate they may reduce competition for RCW cavities.

Within 1/2 mile of active RCW clusters and inactive clusters or recruitment stands that have been made suitable for translocation, retain single dead trees (not part of a SPB spot), including vacated SPB trees. Within 1/4 mile of inactive RCW clusters which are not suitable for translocation, retain single dead trees, including vacated SPB trees.

In SPB spots one acre or larger in size, retain six vacated SPB sawtimber size trees per acre if available, two of which should be the largest trees.

In SPB spots less than one acre, retain two of the larger vacated SPB trees, if available. These guidelines do not preclude salvage of dead trees from large areas resulting from insect outbreaks, hurricanes, tornadoes or other catastrophic occurrences.

3.2.6 Translocation

Translocation of RCWs will be used to expand existing populations and to re-establish RCW to areas where extirpated.

Prior to any translocation a suitable cavity(s) must be available in the cluster and midstory control shall be completed.

The following priorities will be used when planning augmentation of any single bird group; however, single bird groups in populations with 50 or less active clusters will have priority over single bird groups in populations with more than 50 active clusters:

- (1) A single bird group located a mile or more from another group containing a breeding pair.
- (2) A single bird group with one or two breeding pairs within a mile.
- (3) A single bird group with three to four breeding pairs within a mile.
- (3) A single bird group with five or more breeding pairs within a mile.

Priorities for re-establishing RCW groups (translocation of a male and female bird to one location) vary by management objective. If expanding an existing population, the priorities above for augmentation would be used. Re-establishment should not be used to expand existing populations until all single bird groups have been successfully augmented.

Re-establishment of RCW into currently unoccupied HMAs should not be attempted until all existing Forest Service populations have expanded to 50 or more active clusters.

If the objective is re-establishment of RCW into a currently unoccupied HMA, priority should be given to those areas which have the best quality habitat. Assuming HMAs with equally good habitat exist, priority should be given to the HMA which held RCW most recently. For example an area that lost its last RCW in 1989 is a higher priority than an area which lost its last bird in 1983.

Translocation of RCW within populations/subpopulations is encouraged. Any population with reproduction, regardless of size, and single bird groups should be a candidate for such intrapopulation translocations.

If translocations between populations are necessary, it is desirable to move birds between areas of similar latitude, elevation, and forest type.

Planned translocation of RCW is required to maintain genetic viability of populations with a reproducing population of less than 250. Such genetic exchanges can be through subadult augmentation.

3.3 Protection of Clusters, Replacement, and Recruitment Stands

The following standards and guidelines ensure that RCW clusters, replacement and recruitment stands are not adversely affected by management activities for other forest resources.

3.3.1 Cutting of Trees

Timber harvest, other cutting, or killing of trees is prohibited within clusters, replacement or recruitment stands except where these actions would protect or improve RCW habitat (e.g., thinning, SPB control, midstory removal). Snags or other dead trees may not be removed unless they pose a threat to public safety (e.g., adjacent to an open road).

Cutting of cavity trees (living or dead) in active or inactive clusters (including inactive clusters identified as replacement or recruitment stands) is prohibited unless they pose a threat to public safety, or to protect the cluster, replacement or recruitment stand from insect attack. The U.S. Fish and Wildlife Service must be contacted and issue a concurrence before any cavity tree may be cut.

3.3.2 Motorized, Heavy Equipment, and Concentrated Human Use Areas

RCW habitat improvement projects within or adjacent to clusters, replacement or recruitment stands which involve motorized or heavy equipment must include sufficient project administration and/or contract language to protect these stands, especially cavity trees and potential cavity trees.

The development of new concentrated equipment use or concentrated human use areas such as log decks, off-road vehicle trails, trail heads and camp sites is prohibited within clusters, replacement and recruitment stands.

Short-term uses, e.g., pine straw baling, may be allowed in recruitment stands if a site specific analysis indicates they will have no long-term adverse effect on the stands suitability as potential nesting habitat.

Existing uses shall be modified or relocated if they are found to adversely affect the RCW.

Also, see 3.3.4 Nesting Season Disturbance.

3.3.3 Cavity Tree Protection During Prescribed Burning Operations

Burning prescriptions and cycles must minimize risk to cavity trees.

Cavity trees must be protected by raking away or back burning adjacent fuels, use of fire retardents, etc.

Plow lines will be kept 200 or more feet from cavity trees unless an emergency or site specific circumstance such as location of a property boundary, etc., dictate the need to locate them closer. If conditions dictate plow lines be placed within 200 feet of cavity trees, use of a dozer blade to lightly scrape away fuels is preferable to using a deep cutting plow.

3.3.4 Nesting Season Disturbance

All potentially disturbing activities within clusters shall be scheduled before or after the nesting season.

Such activities include RCW habitat improvement activities, except as necessary for the continued survival of the group, e.g., installation of artificial cavities to replace cavities lost to natural causes. Another exception e.g., is prescribed burning, which is allowed during the nesting season.

The general nesting season dates of March 1 - July 31 will be respected unless the specific RCW population's nesting season is determined through monitoring to be different.

3.3.5 Construction of Rights-of-Way

Construction of linear rights-of-way, such as roads, powerlines, or pipelines is prohibited within clusters, replacement or recruitment stands.

3.3.6 Existing Rights-of-Way Reconstruction and Maintenance

Reconstruction or maintenance of existing roads, powerlines, or pipelines through clusters, replacement or recruitment stands is allowed if the activities are scheduled outside the nesting season. Such activities shall be closely monitored to ensure protection of cavity trees and potential cavity trees.

Light maintenance of high standard open roads, such as road grading or mowing of rights-of-way, and emergency maintenance of powerlines and pipelines, may be allowed during the nesting season.

3.3.7 Southern Pine Beetle Suppression

Minimize the potential impact of southern pine beetle (SPB) through thinning and prompt control actions.

USDA Forest Service RCW Management Standards and Guidelines

The following standards apply, established by the SPB Record of Decision for protecting both cavity trees and RCW during control actions in active clusters:

Cutting of trees already vacated by SPB is prohibited unless they pose a threat to public safety.

Cutting of SPB infested inactive cavity or relict trees is allowed within a designated treatment buffer zone only to protect the rest of the cluster.

Cutting of any infested tree within 200 feet of a cavity tree is allowed only to protect the cavity tree.

Cut and remove SPB control operations are prohibited during nesting season.

Only minimal disturbance, such as cutting or chemical treatment, is allowed to protect cavity trees during the nesting season.

The pile and burn SPB control technique is prohibited within clusters.

SECTION 4 - MANAGEMENT IN HMAs

This section describes activities that may occur **within HMAs but outside clusters, replacement and recruitment stands** to provide a sustained flow of RCW habitat. It includes silvicultural guidelines that are addressed by forest type. It also identifies the variation in Standards and Guidelines by MIL.

4.1 Foraging Habitat Management - General

Adequate levels of foraging habitat shall be provided for all active clusters and recruitment stands.

Available foraging habitat includes the cluster, recruitment and replacement stands.

Foraging habitat is not required for inactive clusters **unless** identified as recruitment stands.

Additional foraging habitat is not required for replacement stands, as they are always associated with active clusters that should have adequate foraging habitat.

Adequate foraging habitat will be provided according to U.S FWS guidelines for preparation of biological assessments and evaluations for the RCW (Blue Book Standards), whenever pine tree removal is planned within 1/2 mile of clusters or recruitment stands.

The following foraging habitat requirements must be met for all active clusters and recruitment stands:

At least 8,490 square feet of BA in pine stems larger than 5 inches DBH.

At least 6,350 pine stems 10 inches DBH or larger and 30 years old or older.

Must be within 1/2 mile of the geometric center of the cluster or recruitment stand. (If existing foraging within the 1/2 mile radius circle is inadequate, stands beyond 1/2 mile must be included to meet foraging requirements.)

USDA Forest Service RCW Management Standards and Guidelines

Must be continuous and contiguous with the cluster or recruitment stand.

Include only pine or pine-hardwood stands (excluding white and sand pine). An exception to this requirement is the Daniel Boone NF, where hardwood-pine stands may be counted as foraging, until pine or pine-hardwood stands can be restored within 1/2 mile of the cluster.

Stands identified as foraging habitat should be maintained at 70-110 square feet of pine BA, depending on site and stand condition. However, stands with 30 or more square feet of pine BA may be considered as suitable foraging habitat, ie., mixed stands, pine shelterwood cuts, etc.

Where foraging is limited, make thinning of young stands (<10" DBH) within 1/2 mile of active clusters a priority. Thin such stands using standard silvicultural prescriptions.

Provide 100% of foraging for RCW groups whose 1/2 mile foraging zone extends onto another ownership unless a coop agreement exist with the non-Forest Service landowner to ensure they will provide their proportional share of foraging habitat.

Provide the Forest Service proportional share of foraging for RCW groups on adjacent non-Forest Service land when a group's 1/2 mile foraging zone extends onto National Forest, even if no cooperative agreement exists.

4.2 Reduced Foraging Habitat

Foraging habitat may be provided at a level below that given in Section 4.1 if the following situations occur, and providing there is a finding that RCW populations would benefit in the long-term:

- 1) Thinning to reduce risk of SPB outbreaks per the SPB EIS and ROD, even if foraging is limited. Such thinnings must be supported by a SPB hazard analysis showing a moderate or high risk of infestation.
- 2) Thinning of dense immature sawtimber stands (>110-120 BA) to improve their suitability as foraging habitat even if foraging is limited. Such stands may be reduced to a BA of 90.
- 3) To expedite the restoration of pine species preferred by RCW, foraging habitat for recruitment stands 1.5 miles or more from an active cluster can be reduced 50% below U.S. FWS requirements (Blue Book Standards). This would require approximately 3,175 stems \geq 10" DBH and at least 30 years old, and 4,245 square feet of pine BA in stems 5" DBH and larger. The foraging habitat must be contiguous and continuous with the recruitment stand.

If such a recruitment stand is activated or a new active cluster is found closer than 1.5 miles, a full complement of foraging must be provided, if available, for the new active cluster and any recruitment stands within 1.5 miles of it. If a full complement of foraging is not available all foraging within 1/2 mile will be retained.

Obtain Regional Forester approval prior to implementation of any thinning or restoration project which reduces foraging below Blue Book Standards.

4.3 Providing Future Nesting Habitat

Manage pine and pine-hardwood stands in the general forest area within HMAs to provide potential nesting habitat outside clusters, replacement and recruitment stands. Implementing the following actions will enhance the production of potential cavity trees in the shortest time:

Retain the pine (by forest type) on the oldest 1/3 of existing acres within a HMA until they reach rotation age, through the first rotation.

It may be desirable to regenerate a portion of the oldest 1/3 before it reaches rotation age to facilitate achieving regulation in areas managed with even-aged systems. In such cases regeneration within the oldest 1/3 may occur if the oldest 1/3 is within 10-20 years of rotation. Any regeneration must occur in the youngest end of the oldest 1/3. This is not a blanket exception to retaining the oldest 1/3 and would only be allowed in specific situations.

Do not remove relicts in thinning operations in HMAs classified as MIL 2 through 4. A possible exception is non-longleaf relicts so closely spaced that potential for SPB infestation is increased. In such situations the relicts may be thinned to a minimum spacing of 20-25 feet.

Stands approaching an age of providing potential nesting habitat, generally 70-100 years depending on pine species, should be managed as follows:

Maintain a pine BA of 60-80 square feet and maintain a minimum spacing of 20-25 feet between dominant and codominant trees. Spacing is especially critical in the non-longleaf types.

Maintain an open park-like structure through regular prescribed burning.

NOTE: The above direction is not to imply that stands should be ignored until they reach potential nest tree age. Regular thinning and burning throughout the life of a stand is sound management from both an ecological and silvicultural viewpoint. See Sections 4.4 and 4.7.

In addition to the above guidelines, several mitigation measures identified in the Regeneration Sections have enhancement of nesting habitat as a primary objective.

4.4 Prescribed Burning

Outside clusters, replacement and recruitment stands the objective is midstory reduction (not total elimination) using primarily prescribed burning.

Establish a burning cycle of two to five years HMA-wide. In stands where fire has been excluded for many years, annual burning may be necessary to significantly reduce midstory.

Emphasize use of growing season burns in ecologically appropriate areas. Recognize, however, that habitat goals may require burning whenever conditions permit.

USDA Forest Service RCW Management Standards and Guidelines

All burning prescriptions will be based on site specific conditions, including vegetation, site and weather conditions, and RCW management priorities.

Use natural firebreaks (streams, roads, swamps, etc.) whenever possible to reduce impacts of constructing firelines.

4.5 SPB Hazard Reduction

Thinning is the primary tool to use to maintain tree vigor and reduce SPB hazard.

Follow the standard Southern Region thinning guides, except that, in addition, RCW tree selection criteria are used (see Section 4.7).

From 70 to 110 square feet of pine BA should be maintained, depending on site and stand conditions and the availability of RCW foraging habitat.

In stands where SPB hazard is rated as moderate or higher, thin to achieve a minimum spacing of 20-25 feet between trees while retaining at least 70 square feet of overstory pine BA.

Give priority for thinning to stands within 1/4 mile of active clusters.

Follow direction in the SPB FEIS and ROD and "Managing Southern Forests to Reduce Southern Pine Beetle Impacts".

4.6 Clearing for Nontimber Management Purposes

This direction applies to any clearing created for nontimber reasons, such as oil/gas exploration/development, developed recreation sites, wildlife openings, ponds/lakes, etc., in pine and pine-hardwood (and hardwood-pine on the Daniel Boone NF).

Permanent clearings for nontimber purposes may not occur if the loss of habitat would reduce the capability of the HMA to support its identified RCW population objective.

In MILs 3 and 4 clearings are not allowed within 1/4 mile of RCW groups.

Clearings are not allowed if foraging habitat is limited, or if the clearing completely severs a cluster or recruitment stand from its foraging habitat.

In situations where mineral rights are privately-owned, limit or prohibit clearings for the exploration/development of these resources to the extent legally possible. Consult with OGC.

4.7 Thinning

Thinning of forest stands is a key activity in the timely production of good RCW habitat. Direction for thinning pine and pine-hardwood stands varies depending on the age of the stand to be thinned and its suitability as RCW foraging habitat.

Thinning of stands considered unsuitable as foraging habitat (average DBH of < 10") is encouraged and may take place at any time. Standard silvicultural guidelines apply.

Provide for the following in stands that are ≥ 10 " DBH:

- Maintain pine BA of 70-110 square feet, depending on site and stand condition.

- Do not remove more than 30 square feet of BA in the dominant or codominants in any single thinning operation.

In MILs 2-4:

Use the following priority to select pine trees to retain:

- (1) relict trees
- (2) other potential cavity trees
- (3) trees >10" DBH that are not potential cavity trees
- (4) trees <10" DBH

In MIL 1: Same as in MILs 2-4 except trees to retain should be well formed, healthy, and vigorously growing.

As stands approach the age to provide potential nesting habitat, generally 70-100 years depending on pine species, they should be managed as follows:

Maintain a pine BA of 60-80 square feet and maintain a minimum spacing of 20-25 feet between dominant and codominant trees. Spacing is especially critical in the non-longleaf types.

Maintain an open park-like structure through regular prescribed burning. See Section 4.4.

If foraging habitat is limited, thinnings in stands ≥ 10 " DBH and ≥ 30 years old may not occur, except in some situations it may be desirable to thin even if foraging is limited. See Section 4.2, Reduced Foraging Habitat, for specifics on these situations.

4.8 Regenerating and Sustaining RCW Habitat

The successful regeneration, growth, and development of adequate numbers of pine trees is essential to providing RCW habitat in the long-term. A full range of regeneration methods, even-aged, two-aged, and uneven-aged may be used.

4.8.1 Balanced Even-Aged and Two-Aged Silviculture for RCW Habitat

Even-aged and two-aged age class distribution will be regulated by area control using the formula $A/R \times T$, where A = area under management, R = rotation length, and T = the time of each entry cycle. Regulation will be based on total acres of pine and pine-hardwood in an HMA identified as suitable for timber management managed with even-aged or two-aged systems.

Rotation age for pine-hardwood forest types will be set by the pine species being managed.

Table A-5 shows the minimum rotation ages prescribed for the various pine species and the acreage that may be sustainably regenerated per decade. For exceptions, see Sections 2.3 and 4.8.5.

Table A-5

Percentage of Area that may be regenerated by Forest Type and Rotation Length.

The area that may be regenerated in any decade decreases as the rotation age increases.

Forest Type	Rotation*	Percentage of Area to Regenerate in 10- Year Period
Longleaf pine	120 years	8.3%
Shortleaf pine	120 years	8.3%
Loblolly pine	100 years	10.0%
Slash pine	100 years	10.0%
Loblolly and shortleaf pine (southern pine beetle option) **	80 years	12.5%
Virginia pine	70 years	14.3%

* The Forest Service recognizes there are sites where trees, for various reasons, will not live to the prescribed ages.

** An optional rotation exists for loblolly and shortleaf pine where a high probability of southern pine beetle outbreaks or site limitations make tree survival beyond 80 years risky. See Section 4.8.7.

USDA Forest Service RCW Management Standards and Guidelines

Calculate appropriate even-aged and two-aged regeneration acres within an HMA based on:

- The MIL of the particular RCW population.
- The acres of suitable RCW habitat (pine and pine-hardwood forest types with potential to produce foraging habitat) within the HMA that are identified as suitable for timber management (Land Class Codes 500 and 600). **Do not** include acres being managed with uneven-aged methods or identified as unsuitable for timber management, ie., RCW clusters.
- The rotation applicable to each forest type represented.
- The existing acreage of each forest type which is in the 0-10 and 0-30 age classes. Existing acres resulting from catastrophic events such as insect outbreaks, fire, weather, etc. **must** be included in the appropriate age class acres. Openings made to control SPB must also be included.
- Additional mitigation measures identified in the following sections on silvicultural guidelines.

4.8.2 Balanced Uneven-Aged Silviculture for RCW Habitat

The two uneven-aged regeneration methods are group selection and single-tree selection.

Uneven-aged stands will be regulated by diameter distribution.

The BDQ method (basal area, maximum diameter, and constant ratio of trees in successions of diameter classes) shall be used to create and maintain a balanced uneven-aged structure.

Where the objective is to grow the maximum number of large pine trees with uneven-aged silviculture:

The average stand BA may range from about 60 square feet per acre after harvest to 75 square feet per acre before harvest.

The maximum diameter limit depends on site productivity and age. Some tree characteristics preferred by RCW are age-dependent; therefore maximum diameter cutting limits must be set large enough to ensure trees old enough to provide these desirable characteristics. A site-specific study must be completed to determine the relationship between size and age before setting the appropriate diameter limit.

The one inch "Q" for this objective should be 1.1 for loblolly pine and 1.2 for longleaf pine.

If RCW nesting habitat is an objective, tree marking guidelines for uneven-aged stands must be modified to leave relict and other potential cavity trees as a component of the larger diameter classes. See Section 4.3.

To maintain an adequate balanced uneven-aged stand structure, establishment of pine regeneration is desirable at least once every 10 years.

With either of the uneven-aged methods care must be taken to not reduce genetic quality and diversity by cutting only the best dominant individuals (high grading).

4.8.3 Minimizing Habitat Fragmentation

The following actions are intended to minimize RCW habitat fragmentation:

No pine stands within 1/4 mile of an active cluster in an HMA classified as MIL 3 or 4 may be regenerated using even-aged (EAM) or two aged cutting methods. **This prohibition includes regeneration cutting to restore desirable pine species.** Only thinnings to enhance RCW habitat or EAM is allowed, if other applicable guidelines including required foraging habitat are met. An exception would be the planting or seeding of stands destroyed by catastrophic events such as hurricanes, tornados, etc.

Limit regeneration patch size (even-aged or two-aged methods) to 40 acres in MILs 1 and 2 and 25 acres in MILs 3 and 4.

Do not create openings greater than 330 feet in width, that completely sever clusters/recruitment stands from their foraging habitat, or that sever corridors linking sub-populations, isolated clusters, etc.

In addition, several mitigation measures identified in the Regeneration Section which have other primary objectives also help limit the potential for fragmentation.

4.8.4 Pine Restoration - General

Pine restoration shall be utilized to replace off-site pine species, competing hardwoods and non-suitable conifers with species more desirable for RCW habitat. In these situations, off-site is defined as any species growing on a site historically occupied by a different species, regardless of how well or poorly the off-site species is growing. Normally restoration will be based on soil and site conditions and may be used to restore any desirable species. However, longleaf and shortleaf pine are the species that will likely be restored most often.

Clearcutting and planting will normally be the optimal method for pine restoration. However site specific conditions, such as limited foraging for active clusters, may dictate use of a different regeneration method or deferring restoration.

Set Forest Plan pine restoration objectives to minimize any potential adverse effects of creating age class imbalances in the pine type age class distribution. When developing a restoration program, a Forest plan must first identify the total number of acres within an HMA needing to be restored. Based on this information, an individual Forest Plan has the flexibility to estimate how many acres to restore per entry to meet its objectives. Base the rate of restoration on rotation and age class distribution for either forest type or management type.

If forest type is used, rate of restoration will be based on existing acres of the species being restored.

USDA Forest Service RCW Management Standards and Guidelines

If management type is used, the rate will be based on the total of existing acres of species being restored plus the acres of off-site species to be replaced.

The following example illustrates the previous four guidelines: An HMA contains 10,000 acres of existing longleaf pine stands. Off-site slash pine is growing on another 10,000 acres. If the rate of regeneration is based on forest type for the desired species (longleaf) then 830 acres could be restored to longleaf each 10 years ($10,000 \text{ ac.} \times 0.083$) where 0.083 equals the percentage that may be harvested per 10 years under a 120 year rotation. If restoration is based on management type, 1660 acres could be restored per 10 years ($20,000 \text{ ac.} \times 0.083$). The 20,000 acres is the total of existing longleaf and off-site slash.

The following apply to **all** restoration efforts, including Accelerated Pine Restoration (Section 4.8.5).

In a population classed as MIL 3 or 4, restoration using even-aged or two-aged regeneration methods may not occur within 1/4 mile of an active cluster.

Plan restoration to avoid excessive age class bulges, especially if the new stands are to be managed with an even-aged system.

No existing stands of the desired pine type (species being restored) may be regenerated until they reach rotation age, although thinnings may occur. If regeneration of the desired pine type before rotation age is deemed necessary to expedite achieving a balanced age class distribution, it must not occur in the oldest 1/3 of the existing desired pine type.

Do not create openings greater than 330 feet in width which completely sever clusters/recruitment stands from their foraging habitat or that sever corridors linking sub-populations, isolated clusters, etc.

During restoration all existing trees of the desired species shall be retained, with two exceptions. Clumps of desired species that are dominant or codominant with a basal area of greater than 70 square feet can be thinned to improve RCW habitat conditions. Clumps of desired species less than 10 inches DBH and less than 30 years old can be thinned to promote growth and vigor.

Conversion of longleaf to another pine species within an HMA requires consultation with the U.S Fish and Wildlife Service.

4.8.5 Accelerated Pine Restoration

The rate of restoration may be accelerated as long as there is no short-term adverse effects on RCW and there will be a long-term benefit to them. There are three specific situations where an accelerated rate of restoration may be desirable, and is allowed:

1) HMAs with sparse or scattered RCW populations. In order to expedite restoration in **portions of an HMA that are 1.5 miles or more from an active cluster** the 0-10 and 0-30 guidelines may be exceeded and a reduced level of foraging habitat may be provided for recruitment stands, provided that:

During the first 20 years of RCW Strategy implementation the area in the 0-10 age classes cannot exceed 15 percent, and the area in the 0-30 age classes cannot exceed 40 percent.

USDA Forest Service RCW Management Standards and Guidelines

Foraging habitat for recruitment stands can be reduced to 3,175 pine stems $\geq 10"$ DBH and at least 30 years old and 4,245 square feet of pine BA in stems $\geq 5"$ DBH (see Section 4.1).

- 2) When soils or other site factors cause off-site species to experience severe mortality after 40-50 years of acceptable growth.

This situation is one of the most difficult to resolve because available foraging habitat is frequently being lost at a rate far in excess of the rate of replacement. Restoration efforts should be concentrated in the oldest stands of off-site species.

- 3) When soils or other site factors prohibit trees from reaching foraging size (10 inches DBH) regardless of age (stagnation).

The off-site stands being regenerated do not qualify as foraging habitat, therefore the rate of restoration is limited only by the previous mitigation measures which apply to all restoration efforts. See Section 4.8.4.

4.8.6 Regenerating Longleaf Pine

Longleaf has been successfully regenerated using the clearcut, shelterwood, irregular shelterwood, group selection and single-tree selection regeneration methods.

Clearcutting

The primary use of clearcutting in the longleaf type will be the restoration of longleaf on longleaf sites currently occupied by another pine species.

The use of clearcutting for restoration is allowed in all MILs.

In MIL 1 clearcutting may be used to regenerate very sparse (<24 pines 10" DBH or larger per acre) or damaged stands .

Shelterwood (With Reserve Trees)

MIL 1:

- Reduce stand to 25-30 square feet of pine BA at first cut.
- Seed trees should be vigorous, well formed and show signs of past seed production.
- Once a new stand of seedlings is established the seed trees can be removed.
- Retention of 10 square feet of BA but not less than 6 longleaf trees per acre (longleaf reserve trees) is optional, but encouraged. If retained, they should be clumped.

MILs 2 and 3:

Same as MIL 1, except retention of longleaf reserve trees is mandatory.

Priorities for selecting the reserve trees are:

- (1) relict trees
- (2) other potential cavity trees
- (3) other trees > 10" DBH that meet requirements as seed producers

Reserve trees would remain until the HMA is classified as MIL 1.

MIL 4:

Same as MILs 2 and 3 except leave 40 square feet pine BA at first cut.

Group Selection

The group selection method may be used in all MILs, unless foraging habitat is limited.

Anyone attempting to implement group selection in longleaf should be thoroughly familiar with and follow the methodology developed by Farrar and Boyer (1991). Farrar R.M. Jr. and W. D. Boyer. 1991. Managing longleaf pine under the selection system - promises and problems. Pages 357-368 in Proceedings of the Sixth Biennial Southern Silvicultural Research Conference. USDA Forest Service, Southeastern Forest Experiment Station, General Technical Report SE-70. Asheville, NC.

The group selection method of regeneration involves removal of trees in scattered patches at relatively short intervals (approximately every 10 years). This cutting pattern is repeated indefinitely to encourage the continuous establishment of regeneration and the development, and maintenance of a balanced uneven-aged stand structure. The objective of the group selection method is to have each size class, ranging from seedlings to large trees occupying approximately the same number of acres in each stand, but arranged in groups of 1/2 to 2 acres in size.

Thinning or improvement cuts should be made during each cutting cycle when group openings are made. Individual tree characteristics are to be considered in thinnings and location of openings. Advance longleaf regeneration is needed before openings are made or enlarged. See Section 4.7.

Single-tree Selection

Single tree selection may be implemented in all MILs, unless foraging habitat is limited. There apparently is no published information on implementing balanced single-tree selection in longleaf. The most frequently quoted example of single-tree selection in longleaf is the quail plantations in the Red Hills region of south Georgia/north Florida. See Attachment 1 for a discussion of forest management on these plantations.

4.8.7 Regenerating Shortleaf, Loblolly, and Slash Pine

These three pine species have been successfully regenerated using the clearcut, seed-tree, and shelterwood methods. In addition, shortleaf and loblolly have been successfully regenerated with group and single-tree selection methods. There have been no scientific tests of irregular shelterwood in either forest type. However, Forest Service researchers have stated they see no reason why the method should not work if residual leave BA and subsequent growth is not too great. The use of group and single-tree selection is untested in slash pine, which is very shade intolerant.

Clearcutting

The primary use of clearcutting will be the restoration of pine species that are more desirable as RCW habitat on sites currently occupied by a different pine species. Although there may be situations where restoration of either these three species is desirable, shortleaf will probably be restored most frequently of the three.

The use of clearcutting for restoration is allowed in all MILs.

In MIL 1 clearcutting may also be used to regenerate very sparse (<24 pines 10" DBH or larger per acre) or damaged stands.

Shelterwood (With Reserve Trees)

MIL 1:

- Reduce stand to 25-30 square feet of pine BA at first cut.
- Seed trees should be vigorous, well formed and show signs of past seed production.
- Once a new stand of seedlings is established the seed trees can be removed.
- Retention of 6 trees per acre (reserve trees) is optional, but encouraged.
- Distribution of reserve trees, if retained, is at the discretion of the manager.

MIL 2:

Same as MIL 1, except retention of reserve trees is mandatory.

Priorities for selecting the reserve trees are:

- (1) relict trees
- (2) other potential cavity trees
- (3) other trees > 10" DBH that meet requirements as seed producers

Reserve trees would remain until the HMA is classified as MIL 1.

Irregular Shelterwood

MIL 3:

-Reduce stand to 25-30 square feet of pine BA at first cut.

-All these trees are to remain until the HMA moves into MIL 2.

-Priorities for selecting trees to be retained as shelterwood are:

- (1) relict trees
- (2) other potential cavity trees
- (3) other trees > 10" DBH that meet requirements as seed producers

-When the HMA moves into MIL 2 the shelterwood trees may be removed, except for 6 trees per acre.

MIL 4:

-Reduce stand to 40 square feet of pine BA at first cut.

-Priorities for selecting trees to be retained as shelterwood are:

- (1) relict trees
- (2) other potential cavity trees
- (3) other trees > 10" DBH that meet requirements as seed producers

-All these trees are to remain until the HMA moves into MIL 3.

-When the HMA moves into MIL 3 the shelterwood trees may be reduced to 25-30 square feet of BA.

Group Selection and Single-tree Selection

Uneven-aged stands will be regulated by diameter distribution.

USDA Forest Service RCW Management Standards and Guidelines

If using group selection, groups should range from 1/4-2 acres in size.

The BDQ method (basal area, maximum diameter, and constant ratio of trees in successions of diameter classes, FEIS, Glossary) shall be used to create and maintain a balanced uneven-aged structure.

Where the objective is to grow the maximum number of large pine trees with uneven-aged silviculture:

The average stand BA should range from about 60 square feet per acre after harvest to 75 square feet per acre before harvest.

The maximum diameter limit depends on site productivity and age. Some tree characteristics preferred by RCW are age-dependent; therefore maximum diameter cutting limits must be set large enough to ensure trees old enough to provide these desirable characteristics. A site-specific study must be completed to determine the relationship between size and age before setting the appropriate diameter limit.

The one inch "Q" for this objective should be 1.1 for loblolly pine.

Where production of RCW nesting habitat is an objective, tree marking guidelines for uneven-aged stands must be modified to leave relict and other potential cavity trees as a component of the larger diameter classes. NOTE: Given the difficulty of burning uneven-aged stands of these pine species, the frequent use of herbicide may be necessary to control hardwood midstory. Also, the dense but necessary pine midstory may make maintenance of the open stand structure characteristic of good nesting habitat difficult to achieve.

To maintain an adequate uneven-aged stand structure, establishment of pine regeneration is desirable at least once every 10 years.

With either of the uneven-aged methods care must be taken not to reduce genetic quality and diversity by cutting only the best dominant individuals (high grading).

Regenerating Shortleaf and Loblolly Pine In High Risk SPB Areas

This management option may be implemented under the following conditions:

- Historical records indicate the dominant overstory species at the landscape level was loblolly or shortleaf pine.
- Historical records indicate a high probability of catastrophic SPB outbreaks.
- Soils information indicates a low probability of loblolly living, as a stand, to the 100 year rotation age.
- Historical records indicate the presence of littleleaf disease on shortleaf sites.

USDA Forest Service RCW Management Standards and Guidelines

MIL 1:

- Reduce stand to 25-30 square feet of pine BA, but not less than 10 trees per acre, at first cut.
- Seed trees should be vigorous, well formed and show signs of past seed production.
- All seed trees are to remain indefinitely.
- The reserve trees will be dispersed over the regeneration area.

MILs 2 and 3:

Same as MIL 1, except:

- Priorities for selecting trees to be retained as shelterwood are:

- (1) relict trees
- (2) other potential cavity trees
- (3) other trees > 10" DBH that meet requirements as seed producers

MIL 4:

Same as MILs 2 and 3 except:

- Reduce stand to 40 square feet of pine BA, but not less than 10 trees per acre, at first cut.
- When the HMA moves into MIL 3 the shelterwood trees may be reduced to 25-30 square feet of BA, but not less than 10 trees per acre.

ALL MILs:

Any shelterwood trees remaining at the end of the rotation will be identified as shelterwood/reserve trees for the next rotation.

4.8.8 Regenerating Virginia Pine

Virginia pine is a shallow rooted species which is very prone to windthrow if stands older than 7-10 years are thinned.

Clearcutting is likely to be the optimal regeneration method for this species.

Some Virginia pine stands now grow on sites which are also suitable for other pine species (usually shortleaf) that are more desirable for RCW habitat.

In such situations the most desirable RCW management is to clearcut the Virginia pine and restore the more desirable pine species.

SECTION 5 - MONITORING

This section contains the monitoring plan which shall be used to determine the effectiveness of the RCW Management Standards and Guidelines.

5.1 Cluster Status and Management Needs Data Base

Use the R8 computerized RCW database to track group status, cavity use, habitat improvement, treatment accomplishments and needs, cluster conditions, and population survey status. Update the database annually and use to help set habitat treatment priorities, report accomplishments, identify population trends, reproductive success, and describe response to treatments.

5.2 Population Monitoring

Population monitoring is necessary to protect RCW and to prioritize management actions and determine reproductive success. Monitor RCW populations at intervals determined by population size and trend (See Table A-6).

1) Population Size and Trend

Determine population size and track population trends on an annual basis using sequential periodic surveys of compartments (Hooper and Muse, 1989).

2) Group Check

Check active and suspected active clusters and count the RCWs in each group, and identify all single bird groups.

This consists of annual roost checks of active clusters to determine presence of birds. Identification of single bird groups is critical. Schedule translocations for single-bird groups. Translocations will require additional monitoring to evaluate success. For short periods this monitoring could be very intensive.

3) Determine nesting success by monitoring the appropriate number of groups as prescribed in Table A-6 and tally young.

4) Group Survey

Survey all potential RCW nesting habitat in at least 10 percent of the compartments and tally new clusters and groups.

Systematic searches of all suitable nesting habitat in 10 percent of compartments annually will ensure the location of all new clusters and groups. Where possible, pursue cooperative efforts with other responsible agencies to complete surveys of suitable but unsurveyed RCW habitat on lands adjacent to National Forests. Lands within 3/4 mile of the National Forest boundary would be highest priority.

5) Problem Identification

Identify problems affecting any groups potentially caused by flying squirrels, rat snakes, avian competitors, etc.

Identified competition by other cavity nesters or predators and loss of cavities will be used to prioritize and schedule work to resolve these problems (remove squirrels, install snake and squirrel excluders, install nest boxes for competitors, etc.).

5.3 Habitat Monitoring

Habitat monitoring is necessary to assure that the RCW has adequate nesting and foraging areas to support recovery populations in the future.

1) Cluster Status Check

Survey each cluster (active and inactive) and recruitment stands with artificial cavities at intervals determined by population size and trend (See Table A-6). The information will be updated each year and used to assess management needs and schedule actions that meet those needs. Clusters near activities that are potentially disturbing to RCW, such as a timber sale, should be checked during and after the activity is completed. Surveys shall obtain the following information:

- a) Cavity tree status (active/inactive).
- b) Number of usable cavities (determination requires climbing tree).
- c) Are artificial cavities needed?
- d) Are restrictors needed?
- e) Is prescribed burning needed to control midstory?
- f) Is mechanical or chemical midstory control needed?
- g) Is the cluster at risk from southern pine beetle attack and require thinning?

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- h) Are adjacent stands at risk from southern pine beetle and require thinning?

Schedule work to resolve problems identified during the cluster status check. Installation of cavity restrictors or artificial cavities require additional monitoring to ensure proper installation, and acceptance by the RCW.

2) Compliance check

Determine if standards and guidelines are being followed.

Determine the size of regeneration areas, verify the number of trees and basal area left in regeneration areas, etc., to see if the appropriate standards and guidelines are being met.

3) Effectiveness Evaluation

Determine the effectiveness of RCW habitat improvement.

Verify that prescribed treatments were effective. Did the prescribed burn adequately control the midstory? Did the installation of nest boxes for cavity competitors reduce competition for RCW cavities? Are the prescribed regeneration methods on a wide range of sites growing and developing a new age class as expected? etc.

Table A-6 lists the monitoring activities and time frames by population size and trend. The numbered items coincide with the numbered monitoring activities previously listed.

Table A-6**Monitoring Activities by Population (Total Active Groups)**

The intensity of monitoring activities increases in the small, higher risk populations.

ACTIVITY NUMBER/ DESCRIPTION	POPULATION (TOTAL ACTIVE GROUPS)				
	50	50-99	100-199	200-400	>400
P-1 POPULATION SIZE & TREND	Annually	Annually	Annually	Annually	Annually
P-2 GROUP CHECK	At least 25 annually and all groups in 2 years	All groups in 2 years	All groups in 2 years	All groups in 2 years if decreasing; All groups in 4 years if increasing	20%
P-3 NESTING SUCCESS	At least 25 annually and all groups in 2 years	All groups in 2 years if decreasing; 20% sample but not less than 25 groups annually if increasing	20% sample but not less than 25 groups annually.	Optional if increasing; 20% sample if decreasing	20% for translocation
P-4 GROUP SURVEY	At least 10% compartments w/suitable RCW habitat annually	At least 10% compartments w/suitable RCW habitat annually	At least 10% compartments w/suitable RCW habitat annually	At least 10% compartments w/suitable RCW habitat annually	At least 10% compartments w/suitable RCW habitat annually
P-5 PROBLEM ID	Annually	Annually	Annually if decreasing	Annually if decreasing	N/A
H-1 CLUSTER STATUS CHECK	Annually	Annually if decreasing; All clusters in 2 years if increasing	All clusters in 2 years	All clusters in 2 years if decreasing; All clusters in 4 years if increasing or stable	20%
H-2 COMPLIANCE CHECK	After site- specific projects	After site- specific projects	After site- specific projects	After site- specific projects	After site- specific projects
H-3 EFFECTIVENESS EVALUATION	After site- specific projects	After site- specific projects	After site- specific projects	After site- specific projects	After site- specific projects

SECTION 6 - MANAGEMENT IN TENTATIVE HMAs

Tentative Habitat Management Areas have been delineated (FEIS, Appendix A), and tentative population objectives have been established for them using acres of potentially suitable habitat and the appropriate population density target (FEIS Appendix A, Table A-3) based on physiographic province. The delineation of Tentative HMAs is a short-term measure until individual Forest Plans are amended or revised to fully incorporate the entire RCW Standards and Guidelines. The delineation process was the same as previously described for permanent HMAs. Direction for management within the Tentative HMAs is effective immediately and is as follows:

- Within the 3/4 mile circles around active and inactive clusters, the 1990 Interim Standards and Guidelines will remain in effect.

- Within the Tentative HMAs, but outside the 3/4 mile circles, current Forest Plan standards and guidelines will remain in effect, except only the following silvicultural systems and practices shall be allowed:

- Thinning

- Irregular shelterwood (two-aged) method retaining a minimum of 40 square feet of BA.

- Single-tree and group selection (uneven-aged) methods

- Clearcutting (even-aged) method may be allowed to restore longleaf, shortleaf, or other desirable native species to appropriate sites currently occupied by tree species less suitable for RCW. Such restoration would require a site specific environmental analysis showing no detrimental effect to RCW, and identification of sufficient recruitment stands and foraging habitat to meet their tentative population objectives identified in the EIS.

The Tentative HMAs and this Section's Standards and Guidelines will remain in place until individual Forest Plans are amended or revised to incorporate this entire Revised RCW Handbook.

ATTACHMENT 1

THE LEON NEEL SELECTION METHOD

The most frequently quoted example of single-tree selection in longleaf is the quail plantations in the Red Hills region of south Georgia/north Florida. On the ground visits with Mr. Leon Neel, forest manager on several of these plantations, indicate his method is really a combination of single-tree removal (thinnings) and development of occasional small openings.

Mr. Neel's method, as he describes it is more of an art form than a science. Each individual tree is examined before being marked for cutting. The decision to cut a tree is based on Mr. Neel's intuition, familiarity with the area, and the tree's characteristics, i.e., is it a grower, a thinner, or a tree that will not survive until the next cutting cycle. Basal area and size or age class distribution are not considered. From a timber management viewpoint Mr. Neel's objective is to maximize the growth and value potential of each tree while maintaining an open park-like setting. Mr. Neel has stated his management system tends to make an uneven-aged forest look even-aged.

The primary management objective on these plantations is the production and shooting of bobwhite quail. The landowners prefer to hunt in open, park-like stands of pine. Smaller seedlings and saplings (regeneration) interfere with quail shooting and therefore are not a desirable component of their forest. Mr. Neel is sometimes told by landowners to control pine regeneration. This is usually accomplished through the annual dormant season prescribed burns which are conducted to maintain quality quail habitat. Mr. Neel has also known landowners or their employees to order the brush hogging of pine regeneration which managed to survive the annual burns.

The above discussion about plantation owner's attitude toward pine regeneration is presented to make two points. 1) It has been frequently said that Mr. Neel's method does not produce regeneration, when in fact it does. On a tour of some of the quail plantations conducted for RCW EIS team members in June 1994, a plantation where the owner has allowed pine regeneration to grow was visited. On this plantation Mr. Neel had convinced the owner that regeneration was necessary if he wished to perpetuate his forest. 2) If Mr. Neel's or some similar single tree selection method is used with a primary objective of regenerating the longleaf forest to perpetuate RCW habitat, the resulting forest will look quite different from most Red Hills quail plantations. Allowing regeneration to grow as it develops will result in an uneven-aged forest which truly looks uneven-aged, i.e., all age and diameter classes represented.

As previously stated, Mr. Neel describes his method as more of an art form than a science. Mr. Neel spent many years working with Herbert Stoddard in what he describes as an apprenticeship. About 20 years ago Mr. Neel hired a young man to work with him, i.e., serve an apprenticeship. After 20 years, Mr. Neel says this fellow is about ready to turn loose on his own to mark timber. The point is that the Neel single-tree selection method is very complex and difficult to learn. Mr. Neel has stated that given the mobility of most foresters in the Forest Service it is impractical for the agency to attempt implementation of his method. Considering that Forest Service timber is marked by timber marking technicians, who are usually not mobile, it would still take many years before markers could become truly proficient with the Neel method. Mr. Neel has also stated the Forest Service may be better off implementing a more regimented or number oriented uneven-aged method, i.e., the Farrar group selection method.

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The RCW FEIS and implementing standards and guidelines are written to allow the use of single-tree selection in longleaf if a manager so chooses. The preceding is intended to make those who contemplate single-tree selection in longleaf aware of the complexities involved. The following is intended to make them aware of potential problems or trade-offs:

As previously stated, longleaf stands managed as truly uneven-aged stands will likely look very different from the Red Hills plantations or the Wade Tract.

Based on research and observations on the Wade Tract very slow growth of regeneration can be expected. It could take 75-100 years to grow a 10 inch foraging size tree.

Research on what conditions produce wind-firm trees (hurricane resistant) indicate trees grown under stressful conditions as occurs in uneven-aged stands are less wind-firm.

In a regulated uneven-aged longleaf forest there would be more smaller and younger aged trees on every acre than large trees, ie., a pine midstory would exist, reducing the quality of such stands as potential nesting habitat.

There is strong evidence the pre-Columbian longleaf forest was an all-aged forest made up of even-aged stands therefore single-tree selection may not be an appropriate regeneration method to mimic the old growth forest.

APPENDIX B

RCW CHRONOLOGY OF SIGNIFICANT EVENTS

Background

The red-cockaded woodpecker (Picoides borealis) is slightly larger than a bluebird, about seven inches long. In the field it appears black and white with a large white cheek patch. The sexes are identical except the male has a small tuft of red feathers, the cockade, located above the eye at the top of the cheek patch. The cockade is inconspicuous and is rarely seen in the field (Hooper et al. 1980).

The red-cockaded woodpecker (RCW) is a nonmigratory species that once commanded a wide range throughout the pine belt of the Southern United States, extending from Missouri, Kentucky, and Maryland; southward to Florida, and westward to eastern Texas.

The RCW was first listed as an endangered species in 1970. The primary reason for the RCW's decline in numbers can be presumed from historic accounts of the settling of the South and subsequent clearing of the Southern forest. The RCW is most frequently associated with the longleaf pine forest type but is also found in loblolly, slash, shortleaf, pond, and Virginia pine. By the 1930's most of the South's pine forest had been cut over. Undoubtedly, RCW populations declined dramatically as the pine forest disappeared.

The current range of the RCW is limited and fragmented. The largest remaining RCW populations exist on the National Forests extending along the Coastal Plain from North Carolina to Texas, the Piedmont of Georgia and Alabama, and into the interior highlands of Arkansas, Oklahoma, Tennessee, and Kentucky.

The RCW is unique in that it is the only woodpecker inhabiting the fire dependent southern pine ecosystems which exclusively uses living southern yellow pine trees in which to excavate its cavities (USDI Fish and Wildlife Service 1985). Thus, they are the pathfinders of the entire cavity nesting guild in these ecosystems. They also tend to select trees infected with a heartwood decaying fungus Phellinus pini (Conner and Locke 1982). Heartrot is not commonly found in longleaf pine until around 100 years of age and not in loblolly until about 75 years (Wahlenberg 1946; Wahlenberg 1960), therefore most RCW cavities are found in older mature pines. The RCW prefers open, park-like pine stands with very little midstory vegetation.

This document, as suggested by Walters et al. (1988b), will refer to the area (minimum of 10 acres) surrounding aggregates of cavity trees as "clusters", and RCW family units as "groups". This is different from much of the literature, including the red-cockaded woodpecker recovery plan and all existing National Forest System RCW management direction, which refer to the aggregate of cavity trees as "colonies or colony sites" and the RCW family units as "clans".

The Fish and Wildlife Service's listing of the species as endangered in 1973 generated significant interest in the RCW by the scientific community. This interest has continued and has resulted in a significant amount of research by both Forest Service and other researchers, resulting in increased knowledge of the bird and its needs. Past changes in Forest Service management of the RCW, summarized below, reflect the evolution of our knowledge of the species.

Past Forest Service Management

The Forest Service first became involved in RCW management in 1975 when its Regional Wildlife Habitat Management Handbook, FSH 2609.23R (Handbook) was amended to include a chapter on RCW. This initial effort at management protected the cavity trees and a 200 foot radius buffer around them. Hardwood midstory was to be controlled in these buffer areas and 40 acres of pine greater than 20 years old was to be provided as foraging habitat.

In 1979 the Fish and Wildlife Service approved a recovery plan for the RCW under the authority of the Endangered Species Act. The recovery plan recommends: protection of cavity trees and a 200 foot buffer; maintenance of at least 200 acres of habitat associated with and including the cluster; identification and retention of recruitment stands; midstory control; and rotations of at least 100 years for longleaf pine and 80 years for other yellow pines.

The Forest Service revised its Handbook in 1979 to incorporate the Recovery Plan's recommendations: expanding foraging area to between 100 to 250 acres and recommended rotations of 80 years for longleaf and 70 years for other yellow pines. The handbook also required establishment of recruitment stands and midstory control. There was no formal or informal consultation with the Fish and Wildlife Service on either the 1975 or 1979 Handbook chapters.

In the early 1980s the Forest Service was involved in developing Forest Plans. Pursuant to the National Forest Management Act implementing regulations (36 CFR 219) the Regional Guide for the Southern Region was issued in June 1984. It provides regional direction to the National Forests within the Southern Region. The Guide incorporated the 1979 Handbook chapter as specific RCW management direction.

In 1985 the Fish and Wildlife Service revised its 1979 recovery plan, based on the flush of research findings which came available after the original plan was completed. The revised Recovery Plan identified 15 RCW populations needed for recovery. Twelve of these are totally or in part dependent on National Forest System land.

In response to the revised Recovery Plan, the Forest Service again revised its Handbook chapter on the RCW by: identifying RCW populations on the National Forests; establishing population objectives; requiring replacement stands for all active clusters; requiring additional recruitment stands or extended rotations to meet population objectives; and establishing new foraging guidelines for all active clusters and recruitment stands. The Forest Service consulted on the 1985 Handbook revision with the Fish and Wildlife Service, who found that the proposed management would "not jeopardize the continued existence of the RCW".

The 1985 Handbook guided RCW management on National Forests through 1989. Starting in 1988 a series of events greatly affected how the RCW would be managed on National Forest in the future.

RCW Management on the National Forests of Texas - Litigation and the Court-Ordered Plan

In 1988, the Sierra Club and the Texas Committee on Natural Resources amended an ongoing suit (originally captioned Sierra Club v. Block, the name has changed each time the Secretary of Agriculture has changed. For clarity, future references will call it "the Texas Case") against the National Forests in Texas to include allegations that the Forest Service's even-aged management practices "jeopardized" the RCW and constituted a "taking" of the RCW in violation of the Endangered Species Act (ESA) Sections 7 and 9 (16 USC 1536, 1538). The Federal District Court for the Eastern District of Texas found the Forest Service in violation of Sections 7 and 9 of the ESA and ordered the Forest Service to use modified uneven-aged timber management on areas of the forests within 1200 meters of RCW clusters. The order affected about 33% of the acreage on the National Forests in Texas. "Sierra Club v. Lyng, 694 F.Supp. 1260 (E.D. Tex. 1988), as modified October 20, 1988."

In March 1991, the Fifth Circuit Court of Appeals affirmed the District Court as to the ESA violations, but vacated that part of the District Court's order that mandated specific management for the RCW. The Circuit Court ruled that the Forest Service was to propose a plan and consult with the Fish and Wildlife Service on it pursuant to the ESA. The District Court is then to review the plan and shall approve it unless the Court concludes the Forest Service was arbitrary and capricious in developing the plan. "Sierra Club v. Lyng (Glickman) is 926 F. 2d. 429 (5th Cir. 1991)." The Forest Service decided to adopt the Interim Standards and Guidelines for the Protection and Management of the RCW Habitat Within 3/4 Mile of Colony Sites (Interim S&Gs), in place in the rest of the Region since May 1990. (See description of Phase 2 at page 5, ROD) Following consultation, and receipt of a "no jeopardy" opinion by the FWS, the Forest Service submitted the plan to the court in June 1992. In an order issued March 15, 1994, the court refused to allow the implementation of the Interim S&Gs on the National Forests in Texas; therefore the Court Direction remains in effect in these RCW populations. The government's appeal of the District Court's March 15, 1994 order is pending in the Fifth Circuit Court of Appeals.

Costa - Escano Report

In 1988 the Forest Service surveyed the 11 National Forests in the Southern Region which have RCW populations. The survey indicated that 67 percent of the populations were declining (Costa and Escano 1989). Based on this evidence, in September 1988 the Forest Service requested initiation of formal consultation with the Fish and Wildlife Service on amending the Handbook. The Fish and Wildlife Service responded that informal consultation was appropriate for such an action.

Three-Phase Process to Develop New Regional Management Direction for RCW Recovery

The results of the Costa-Escano Report indicating declines in RCW populations on several National Forests, the legal precedent set by the litigation in Texas, and continuous improvement in our knowledge and understanding of the RCW led to the decision to develop new regional management direction for recovery of the species.

The Regional Forester decided upon a three-phase process. Phase 1 was an action to immediately protect the small declining or unstable RCW populations. Phase 2 was a set of interim standards and guidelines developed and implemented to govern management of RCW and its habitat until longer term management direction is adopted. Phase 3 is the subject of this EIS and will be new regional direction for management of the RCW developed through preparation of an environmental impact statement and subsequent decision made through a record of decision.

Following adoption of the March 27 Policy, three events occurred which influenced the development of future management guidelines for the RCW: Hurricane Hugo devastated the RCW population on the Francis Marion National Forest; the Fish and Wildlife Service issued "The Guidelines for the Preparation of Biological Assessments and Evaluations for the Red-cockaded Woodpecker" now referred to as "The Blue Book"; and the National Wildlife Federation sponsored the Scientific Summit on the RCW. Following is a brief discussion of these events and their impacts.

In September 1989, Hurricane Hugo hit the Francis Marion National Forest, devastating the second largest RCW population in existence and the only population which had exhibited an increase in the previous 10 years. The storm felled 87 percent of known cavity trees and possibly killed 63 percent of the RCW. Tremendous efforts to stabilize the population, including the installation of over 1000 artificial cavities, have been very successful. Based on 1994 survey data, there are now 394 active clusters on the Francis Marion, approximately 83 percent of the pre-Hugo population of 477 active clusters. The Hugo experience demonstrates that RCW can be recovered through aggressive and careful management, even after a massive natural catastrophe.

Also in September 1989, the Fish and Wildlife Service issued what has become known as the Blue Book, a set of guidelines to be used by all federal agencies with RCW on their lands when assessing the impact of various activities on the RCW. A major component of the Blue Book is the requirement to determine foraging habitat availability based on the number of pine stems 10 inches or larger in diameter and total pine basal area instead of 125 acres of pine or pine-hardwood forest meeting specific criteria for tree age, size, and spatial distribution. The stem/basal area method of determining available foraging was included in the Interim S&Gs and is included in all alternatives considered in detail in the environmental impact statement. Using the stem/basal area method frequently results in more than 125 acres being needed to provide adequate foraging.

In March of 1990, the National Wildlife Federation sponsored a Scientific Summit on the Red-cockaded Woodpecker. Twenty-four biologists and resource managers, widely respected experts on the RCW, attended. Efforts were made to include participants representing the range of perspectives which exist among different organizations and federal and state agencies.

The intent of the Summit was to develop consensus, where possible, about the biological needs of the RCW and to make recommendations for managing its recovery. Numerous areas of consensus emerged and several management initiatives were recommended to enhance conditions for the RCW. Differences of opinion were sometimes resolved by establishing acceptable "ranges". The Summary Report of the Summit (Appendix G in FEIS) was one of several important sources of information used when developing the alternatives for the EIS.

Appendix B

Phase 2, Interim S&Gs, emphasizes continuing the March 27 Policy's protection of existing RCW clusters while allowing management options to enhance RCW habitat. The intent of Interim S&Gs was to halt population declines, stabilize the RCW populations, begin improving habitat, and increase populations where possible.

The Forest Service issued the Interim S&Gs in May 1990. Interim S&Gs supplements the 1985 Handbook to protect all RCW groups on National Forests with populations of 250 or fewer RCW groups. Interim S&Gs limits silvicultural practices within 1/4- and 3/4-mile circles surrounding all active and inactive RCW clusters. It requires that 25 to 40 square feet of pine basal area be retained after any regeneration cutting within the 1/4- to 3/4-mile zone. It allows clearcutting only to reestablish longleaf pine to improve future RCW habitat.

Interim S&Gs originally applied to all RCW populations except the Apalachicola National Forest in Florida, the Kisatchie-Vernon-Evangeline population in Louisiana, and the National Forests in Texas. The Florida and Louisiana populations were excluded because each had greater than 250 active clusters (USDA 1990). The National Forests in Texas were excluded because the court-ordered management plan remained in effect.

Following informal consultation with the Fish and Wildlife Service and further consideration of the Kisatchie, Vernon, Evangeline, and Apalachicola populations, the Forest Service decided to place them under Interim S&Gs also, in May 1991. The Forest Service concluded that the RCWs on the three Louisiana districts were three distinct populations of less than 250 groups and that the health of the Apalachicola was sufficiently uncertain to merit extending the Interim S&Gs to these forests.

The Interim S&Gs are the current management direction on all National Forests in the Southern Region, except in the National Forest in Texas. The Interim standards and guidelines were incorporated into affected Forest Plans as nonsignificant amendments.

Phase 3 is the decision described in this Record of Decision to select Alternative E as the new RCW management direction region-wide, except only portions apply to the National Forests in Texas. Full implementation of this new direction is a two step process.

The first step, which will occur concurrently with the signing of this ROD, will be the revision of the Handbook and amendment of the Regional guide. Immediate protection for RCW habitat beyond the 3/4 mile radius circles already protected by the Interim S&Gs will be provided by amending 11 Forest Plans to identify tentative HMAs for each RCW population. Within the tentative HMAs only thinning, two-aged (irregular shelterwood), uneven-aged silviculture and clearcutting only for the restoration of desirable pine species will be allowed until the affected Forest Plans can be revised or further amended to fully incorporate the new management direction.

The second and final step of implementing the new RCW management direction involves the revision or amendment of the 11 individual Forest Plans to establish tentative HMAs, tentative population objectives and limit timber harvest methods. I have chosen to use this two-step approach because it responds immediately to the recovery needs of the RCW across its range. At the same time it allows individual forests the flexibility to integrate RCW management with the full range of other multiple uses, and the social and economic factors specific to a geographic area.

The RCW occupies a variety of habitats throughout its range. The RCW management direction established through this two-step approach will provide the consistency needed to aid recovery of the species, yet allow Forest Plan and project level decisions to be responsive to local habitat conditions and other considerations.

Decisions such as the delineation of the permanent HMAs, rotation lengths, and the mix of forest regeneration methods used to perpetuate RCW habitat are best made at these levels. The level of analysis necessary to adequately integrate the new RCW management direction with the variety of other multiple uses, and social and economic factors across the birds' range is certainly beyond the scope of this regional programmatic environmental impact statement.

In the second step each affected forest will consider a range of options to implement the new RCW management direction, within the flexibility provided. This approach provides a logical system for the Forest Service to comply with its many governing laws and regulations, while better disclosing the effects of the proposed actions.

Senate Resolution 285

On October 8, 1994, the U.S. Senate unanimously adopted Senate Resolution 285, sponsored by Senator Trent Lott and others. The resolutions states:

It is the Sense of the Senate that:

1. the Secretary of Agriculture shall, in connection with each proposed forest management change proposed, recognize the multiple uses of the National Forest;
2. the Secretary of Agriculture shall phase in to the greatest extent practicable each forest management change that would amend or revise a forest plan to provide for greater diversity of plant and animal communities in a particular National Forest or district of the Forest Service, and;
3. prior to implementation of such changes, the Secretary of Agriculture shall consider such factors as, economic consequences faced by affected communities, the impact on state and local revenues, and the agency's financial ability to implement such changes.

In summary the resolution supports: continued multiple use management of National Forest, the phasing in of management changes, evaluation of economic impacts at the local and state levels, and an evaluation of the agency's financial ability to implement such changes.

National Forests in Alabama Land and Resource Management Plan

Amendment #15

June, 1995

This Amendment designates tentative Habitat Management Areas (HMAs) for suitable RCW habitat as shown in Appendix D of the Final EIS for the Management of the Red Cockaded Woodpecker and its Habitat On National Forests in the Southern Region, June, 1995.

These tentative HMAs include suitable RCW habitat between the 3/4-mile radius circles around active and inactive clusters currently protected by interim standards and guidelines (May 1990, May 1991, December 1991), as well as the area within the 3/4-mile radius circles. These interim standards and guidelines will remain in effect within the 3/4-mile radius circles until individual Forest Plans are further amended or revised to incorporate the Revised Handbook Direction.

Within the tentative HMAs, but outside the 3/4-mile radius circles, current Forest Plan standards and guidelines will remain in effect with the exception that only the following silvicultural systems and practices will be allowed:

- Thinning.
- Irregular shelterwood method (two-aged).
- Single-tree and group selection methods (uneven-aged).
- Clearcutting method (even-aged) will be allowed to restore longleaf, shortleaf, or other desirable native pine species to appropriate sites currently occupied by trees less suitable for the RCW. This would require a site-specific environmental analysis showing no detrimental effect to the RCW. Before restoration can begin, sufficient recruitment stands and foraging habitat must be identified to meet tentative population objectives identified in the EIS.

The tentative HMAs and accompanying direction will remain in place until the Forest Plan is amended/revised to incorporate the Revised Handbook.

This amendment is not a significant change in the Alabama National Forests Land and Resource Management Plan. The determination that this is a non-significant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual 1920 (53 Fed. Reg. 26:07, July 15, 1983) (see ROD, page 27). This amendment designates tentative HMAs and establishes a tentative population objective for the Alabama National Forests of 1184 active clusters as identified in Table 2E-1 of the FEIS. The tentative population objectives are based on the acreage in tentative HMAs.

Appendix C
Land and Resource Management Plan

This direction for harvest treatments within the tentative HMAs does not alter the long-term relationship between levels of goods and services projected by the land and resource Management Plan.

The National Environmental Policy Act (NEPA) analysis and documentation for this change in direction has been documented in the Draft and Final EIS for Management of the Red-Cockaded Woodpecker and its habitat on National Forests in the Southern Region, June, 1995. This EIS is available for review at the Forest Supervisor's Office, 2946 Chestnut, Montgomery, AL 36107-3010, and at the Regional Office, USDA, US Forest Service, Room 816N, 1720 Peachtree Road, NW, Atlanta, GA, 30367-9102.

Chattahoochee/Oconee National Forests Land and Resource Management Plan

Amendment #17

June, 1995

This Amendment designates tentative Habitat Management Areas (HMAs) for suitable RCW habitat as shown in Appendix D of the Final EIS for the Management of the Red cockaded Woodpecker and its Habitat On National Forests in the Southern Region, June, 1995.

These tentative HMAs include suitable RCW habitat between the 3/4-mile radius circles around active and inactive clusters currently protected by interim standards and guidelines (May 1990, May 1991, December 1991), as well as the area within the 3/4-mile radius circles. These interim standards and guidelines will remain in effect within the 3/4-mile radius circles until individual Forest Plans are further amended or revised to incorporate the Revised Handbook Direction.

Within the tentative HMAs, but outside the 3/4-mile radius circles, current Forest Plan standards and guidelines will remain in effect with the exception that only the following silvicultural systems and practices will be allowed:

- Thinning.
- Irregular shelterwood method (two-aged).
- Single-tree and group selection methods (uneven-aged).
- Clearcutting method (even-aged) will be allowed to restore longleaf, shortleaf, or other desirable native pine species to appropriate sites currently occupied by trees less suitable for the RCW. This would require a site-specific environmental analysis showing no detrimental effect to the RCW. Before restoration can begin, sufficient recruitment stands and foraging habitat must be identified to meet tentative population objectives identified in the EIS.

The tentative HMAs and accompanying direction will remain in place until the Forest Plan is amended or revised to incorporate the Revised Handbook.

This amendment is not a significant change in the Chattahoochee/Oconee National Forests Land and Resource Management Plan. The determination that this is a non-significant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual 1920 (53 Fed. Reg. 26:07, July 15, 1983) (see ROD, page 27). This amendment designates tentative HMAs and establishes a tentative population objective for the Oconee National Forest of 176 active clusters as identified in Table 2E-1 of the FEIS. The tentative population objectives are based on the acreage in tentative HMAs.

Appendix D

Land and Resource Management Plan

This direction for harvest treatments within the tentative HMAs does not alter the long-term relationship between levels of goods and services projected by the land and resource Management Plan.

The National Environmental Policy Act (NEPA) analysis and documentation for this change in direction has been documented in the Draft and Final EIS for Management of the Red-Cockaded Woodpecker and its habitat on National Forests in the Southern Region, June, 1995. This EIS is available for review at the Forest Supervisor's Office, 508 Oak Street, Gainesville, GA, 30501, and at the Regional Office, USDA, US Forest Service, Room 816N, 1720 Peachtree Road, NW, Atlanta, GA, 30367-9102.

Daniel Boone National Forest Land and Resource Management Plan

Amendment #8

June, 1995

This Amendment designates tentative Habitat Management Areas (HMAs) for suitable RCW habitat as shown in Appendix D of the Final EIS for the Management of the Red cockaded Woodpecker and its Habitat On National Forests in the Southern Region, June, 1995.

These tentative HMAs include suitable RCW habitat between the 3/4-mile radius circles around active and inactive clusters currently protected by interim standards and guidelines (May 1990, May 1991, December 1991), as well as the area within the 3/4-mile radius circles. These interim standards and guidelines will remain in effect within the 3/4-mile radius circles until individual Forest Plans are further amended or revised to incorporate the Revised Handbook Direction.

Within the tentative HMAs, but outside the 3/4-mile radius circles, current Forest Plan standards and guidelines will remain in effect with the exception that only the following silvicultural systems and practices will be allowed:

- Thinning.
- Irregular shelterwood method (two-aged).
- Single-tree and group selection methods (uneven-aged).
- Clearcutting method (even-aged) will be allowed to restore shortleaf or other desirable native pine species to appropriate sites currently occupied by trees less suitable for the RCW. This would require a site-specific environmental analysis showing no detrimental effect to the RCW. Before restoration can begin, sufficient recruitment stands and foraging habitat must be identified to meet tentative population objectives identified in the EIS.

The tentative HMAs and accompanying direction will remain in place until the Forest Plan is amended or revised to incorporate the Revised Handbook.

This amendment is not a significant change in the Daniel Boone National Forest Land and Resource Management Plan. The determination that this is a non-significant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual 1920 (53 Fed. Reg. 26:07, July 15, 1983) (see ROD, page 27). This amendment designates tentative HMAs and establishes a tentative population objective for the Daniel Boone National Forest of 66 active clusters as identified in Table 2E-1 of the FEIS. The tentative population objectives are based on the acreage in tentative HMAs.

Appendix E

Land and Resource Management Plan

This direction for harvest treatments within the tentative HMAs does not alter the long-term relationship between levels of goods and services projected by the Land and Resource Management Plan.

The National Environmental Policy Act (NEPA) analysis and documentation for this change in direction has been documented in the Draft and Final EIS for Management of the Red-Cockaded Woodpecker and its habitat on National Forests in the Southern Region, June, 1995. This EIS is available for review at the Forest Supervisor's Office, 1700 Bypass Road, Winchester, KY 40391, and at the Regional Office, USDA, US Forest Service, Room 816N, 1720 Peachtree Road, NW, Atlanta, GA, 30367-9102.

National Forests in Florida **Land and Resource Management Plan**

Amendment #12

June, 1995

This Amendment designates tentative Habitat Management Areas (HMAs) for suitable RCW habitat as shown in Appendix D of the Final EIS for the Management of the Red cockaded Woodpecker and its Habitat On National Forests in the Southern Region, June, 1995.

These tentative HMAs include suitable RCW habitat between the 3/4-mile radius circles around active and inactive clusters currently protected by interim standards and guidelines (May 1990, May 1991, December 1991), as well as the area within the 3/4-mile radius circles. These interim standards and guidelines will remain in effect within the 3/4-mile radius circles until individual Forest Plans are further amended or revised to incorporate the Revised Handbook Direction.

Within the tentative HMAs, but outside the 3/4-mile radius circles, current Forest Plan standards and guidelines will remain in effect with the exception that only the following silvicultural systems and practices will be allowed:

- Thinning.
- Irregular shelterwood method (two-aged).
- Single-tree and group selection methods (uneven-aged).
- Clearcutting method (even-aged) will be allowed to restore longleaf, shortleaf, or other desirable native pine species to appropriate sites currently occupied by trees less suitable for the RCW. This would require a site-specific environmental analysis showing no detrimental effect to the RCW. Before restoration can begin, sufficient recruitment stands and foraging habitat must be identified to meet tentative population objectives identified in the EIS.

The tentative HMAs and accompanying direction will remain in place until the Forest Plan is amended or revised to incorporate the Revised Handbook.

This amendment is not a significant change in the National Forests in Florida Land and Resource Management Plan. The determination that this is a non-significant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual 1920 (53 Fed. Reg. 26:07, July 15, 1983) (see ROD, page 27). This amendment designates tentative HMAs and establishes a tentative population objective for the National Forests of Florida of 2132 active clusters as identified in Table 2E-1 of the FEIS. The tentative population objectives are based on the acreage in tentative HMAs.

Appendix F
Land and Resource Management Plan

This direction for harvest treatments within the tentative HMAs does not alter the long-term relationship between levels of goods and services projected by the Land and Resource Management Plan.

The National Environmental Policy Act (NEPA) analysis and documentation for this change in direction has been documented in the Draft and Final EIS for Management of the Red-Cockaded Woodpecker and its Habitat on National Forests in the Southern Region, June, 1995. This EIS is available for review at the Forest Supervisor's Office, 325 John Knox Road, Suite F-100, Tallahassee, FL, and at the Regional Office, USDA, Forest Service, Room 816N, 1720 Peachtree Road, NW, Atlanta, GA, 30367-9102.

Francis Marion National Forest Land and Resource Management Plan

Amendment #7

June, 1995

This Amendment designates tentative Habitat Management Areas (HMAs) for suitable RCW habitat as shown in Appendix D of the Final EIS for the Management of the Red cockaded Woodpecker and its Habitat On National Forests in the Southern Region, June, 1995.

These tentative HMAs include suitable RCW habitat between the 3/4-mile radius circles around active and inactive clusters currently protected by interim standards and guidelines (May 1990, May 1991, December 1991), as well as the area within the 3/4-mile radius circles. These interim standards and guidelines will remain in effect within the 3/4-mile radius circles until individual Forest Plans are further amended or revised to incorporate the Revised Handbook Direction.

Within the tentative HMAs, but outside the 3/4-mile radius circles, current Forest Plan standards and guidelines will remain in effect with the exception that only the following silvicultural systems and practices will be allowed:

- Thinning.

- Irregular shelterwood method (two-aged).

- Single-tree and group selection methods (uneven-aged).

- Clearcutting method (even-aged) will be allowed to restore longleaf, shortleaf, or other desirable native pine species to appropriate sites currently occupied by trees less suitable for the RCW. This would require a site-specific environmental analysis showing no detrimental effect to the RCW. Before restoration can begin, sufficient recruitment stands and foraging habitat must be identified to meet tentative population objectives identified in the EIS.

The tentative HMAs and accompanying direction will remain in place until the Forest Plan is amended or revised to incorporate the Revised Handbook.

This amendment is not a significant change in the Francis Marion National Forest Land and Resource Management Plan. The determination that this is a non-significant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual 1920 (53 Fed. Reg. 26:07, July 15, 1983) (see ROD, page 27). This amendment designates tentative HMAs and establishes a tentative population objective for the Francis Marion National Forest of 625 active clusters as identified in Table 2E-1 of the FEIS. The tentative population objectives are based on the acreage in tentative HMAs. This amendment will be effective until after the Revised Land and Resource Management Plan is released.

Appendix G

Land and Resource Management Plan

This direction for harvest treatments within the tentative HMAs does not alter the long-term relationship between levels of goods and services projected by the land and resource Management Plan.

The National Environmental Policy Act (NEPA) analysis and documentation for this change in direction has been documented in the Draft and Final EIS for Management of the Red-Cockaded Woodpecker and its habitat on National Forests in the Southern Region, June, 1995. This EIS is available for review at the Forest Supervisor's Office, Francis Marion & Sumter National Forests, 4931 Broad River Road, Columbia, SC 29210-4021, and at the Regional Office, USDA, US Forest Service, Room 816N, 1720 Peachtree Road, NW, Atlanta, GA, 30367-9102.

Kisatchie National Forest **Land and Resource Management Plan**

Amendment #17

June, 1995

This Amendment designates tentative Habitat Management Areas (HMAs) for suitable RCW habitat as shown in Appendix D of the Final EIS for the Management of the Red cockaded Woodpecker and its Habitat On National Forests in the Southern Region, June, 1995.

These tentative HMAs include suitable RCW habitat between the 3/4-mile radius circles around active and inactive clusters currently protected by interim standards and guidelines (May 1990, May 1991, December 1991), as well as the area within the 3/4-mile radius circles. These interim standards and guidelines will remain in effect within the 3/4-mile radius circles until individual Forest Plans are further amended or revised to incorporate the Revised Handbook Direction.

Within the tentative HMAs, but outside the 3/4-mile radius circles, current Forest Plan standards and guidelines will remain in effect with the exception that only the following silvicultural systems and practices will be allowed:

- Thinning.

- Irregular shelterwood method (two-aged).

- Single-tree and group selection methods (uneven-aged).

- Clearcutting method (even-aged) will be allowed to restore longleaf, shortleaf, or other desirable native pine species to appropriate sites currently occupied by trees less suitable for the RCW. This would require a site-specific environmental analysis showing no detrimental effect to the RCW. Before restoration can begin, sufficient recruitment stands and foraging habitat must be identified to meet tentative population objectives identified in the EIS.

The tentative HMAs and accompanying direction will remain in place until the Forest Plan is amended or revised to incorporate the Revised Handbook.

This amendment is not a significant change in the Kisatchie National Forest Land and Resource Management Plan. The determination that this is a non-significant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual 1920 (53 Fed. Reg. 26:07, July 15, 1983) (see ROD, page 27). This amendment designates tentative HMAs and establishes a tentative population objective for the Kisatchie National Forest of 1457 active clusters as identified in Table 2E-1 of the FEIS. The tentative population objectives are based on the acreage in tentative HMAs.

Appendix H

Land and Resource Management Plan

This direction for harvest treatments within the tentative HMAs does not alter the long-term relationship between levels of goods and services projected by the land and resource Management Plan.

The National Environmental Policy Act (NEPA) analysis and documentation for this change in direction has been documented in the Draft and Final EIS for Management of the Red-Cockaded Woodpecker and its habitat on National Forests in the Southern Region, June, 1995. This EIS is available for review at the Forest Supervisor's Office, 2500 Shreveport Hwy., Pineville, LA, 71360, and at the Regional Office, USDA, US Forest Service, Room 816N, 1720 Peachtree Road, NW, Atlanta, GA, 30367-9102.

National Forests in Mississippi Land and Resource Management Plan

Amendment #14

June, 1995

This Amendment designates tentative Habitat Management Areas (HMAs) for suitable RCW habitat as shown in Appendix D of the Final EIS for the Management of the Red cockaded Woodpecker and its Habitat On National Forests in the Southern Region, June, 1995.

These tentative HMAs include suitable RCW habitat between the 3/4-mile radius circles around active and inactive clusters currently protected by interim standards and guidelines (May 1990, May 1991, December 1991), as well as the area within the 3/4-mile radius circles. These interim standards and guidelines will remain in effect within the 3/4-mile radius circles until individual Forest Plans are further amended or revised to incorporate the Revised Handbook Direction.

Within the tentative HMAs, but outside the 3/4-mile radius circles, current Forest Plan standards and guidelines will remain in effect with the exception that only the following silvicultural systems and practices will be allowed:

- Thinning.

- Irregular shelterwood method (two-aged).

- Single-tree and group selection methods (uneven-aged).

- Clearcutting method (even-aged) will be allowed to restore longleaf, shortleaf, or other desirable native pine species to appropriate sites currently occupied by trees less suitable for the RCW. This would require a site-specific environmental analysis showing no detrimental effect to the RCW. Before restoration can begin, sufficient recruitment stands and foraging habitat must be identified to meet tentative population objectives identified in the EIS.

The tentative HMAs and accompanying direction will remain in place until the Forest Plan is amended or revised to incorporate the Revised Handbook.

This amendment is not a significant change in the National Forests in Mississippi Land and Resource Management Plan. The determination that this is a non-significant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual 1920 (53 Fed. Reg. 26:07, July 15, 1983) (see ROD, page 27). This amendment designates tentative HMAs and establishes a tentative population objective for the Mississippi National Forest of 1595 active clusters as identified in Table 2E-1 of the FEIS. The tentative population objectives are based on the acreage in tentative HMAs.

Appendix I
Land and Resource Management Plan

This direction for harvest treatments within the tentative HMAs does not alter the long-term relationship between levels of goods and services projected by the land and resource Management Plan.

The National Environmental Policy Act (NEPA) analysis and documentation for this change in direction has been documented in the Draft and Final EIS for Management of the Red-Cockaded Woodpecker and its habitat on National Forests in the Southern Region, June, 1995. This EIS is available for review at the Forest Supervisor's Office, 100 West Capitol St., Suite 1141, Jackson, MS, 39269, and at the Regional Office, USDA, US Forest Service, Room 816N, 1720 Peachtree Road, NW, Atlanta, GA, 30367-9102.

Croatan and Uwharrie National Forests Land and Resource Management Plan

Amendment #6

June, 1995

This Amendment designates tentative Habitat Management Areas (HMAs) for suitable RCW habitat as shown in Appendix D of the Final EIS for the Management of the Red cockaded Woodpecker and its Habitat On National Forests in the Southern Region, June, 1995.

These tentative HMAs include suitable RCW habitat between the 3/4-mile radius circles around active and inactive clusters currently protected by interim standards and guidelines (May 1990, May 1991, December 1991), as well as the area within the 3/4-mile radius circles. These interim standards and guidelines will remain in effect within the 3/4-mile radius circles until individual Forest Plans are further amended or revised to incorporate the Revised Handbook Direction.

Within the tentative HMAs, but outside the 3/4-mile radius circles, current Forest Plan standards and guidelines will remain in effect with the exception that only the following silvicultural systems and practices will be allowed:

- Thinning.
- Irregular shelterwood method (two-aged).
- Single-tree and group selection methods (uneven-aged).
- Clearcutting method (even-aged) will be allowed to restore longleaf, shortleaf, or other desirable native pine species to appropriate sites currently occupied by trees less suitable for the RCW. This would require a site-specific environmental analysis showing no detrimental effect to the RCW. Before restoration can begin, sufficient recruitment stands and foraging habitat must be identified to meet tentative population objectives identified in the EIS.

The tentative HMAs and accompanying direction will remain in place until the Forest Plan is amended/revised to incorporate the Revised Handbook.

This amendment is not a significant change in the Croatan and Uwharrie National Forests Land and Resource Management Plan. The determination that this is a non-significant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual 1920 (53 Fed. Reg. 26:07, July 15, 1983) (see ROD, page 27). This amendment designates tentative HMAs and establishes a tentative population objective for the Croatan National Forest of 139 active clusters as identified in Table 2E-1 of the FEIS. The tentative population objectives are based on the acreage in tentative HMAs.

Appendix J
Land and Resource Management Plan

This direction for harvest treatments within the tentative HMAs does not alter the long-term relationship between levels of goods and services projected by the land and resource Management Plan.

The National Environmental Policy Act (NEPA) analysis and documentation for this change in direction has been documented in the Draft and Final EIS for Management of the Red-Cockaded Woodpecker and its habitat on National Forests in the Southern Region, June, 1995. This EIS is available for review at the Forest Supervisor's Office, National Forests in North Carolina, Post and Otis Streets, P.O. Box 2750, Asheville, NC 28802, and at the Regional Office, USDA, US Forest Service, Room 816N, 1720 Peachtree Road, NW, Atlanta, GA, 30367-9102.

Ouachita National Forest Land and Resource Management Plan

Amendment #18

June, 1995

This Amendment designates tentative Habitat Management Areas (HMAs) for suitable RCW habitat as shown in Appendix D of the Final EIS for the Management of the Red cockaded Woodpecker and its Habitat On National Forests in the Southern Region, June, 1995.

These tentative HMAs include suitable RCW habitat between the 3/4-mile radius circles around active and inactive clusters currently protected by interim standards and guidelines (May 1990, May 1991, December 1991), as well as the area within the 3/4-mile radius circles. These interim standards and guidelines will remain in effect within the 3/4-mile radius circles until individual Forest Plans are further amended or revised to incorporate the Revised Handbook Direction.

Within the tentative HMAs, but outside the 3/4-mile radius circles, current Forest Plan standards and guidelines will remain in effect with the exception that only the following silvicultural systems and practices will be allowed:

- Thinning.
- Irregular shelterwood method (two-aged).
- Single-tree and group selection methods (uneven-aged).
- Clearcutting method (even-aged) will be allowed to restore longleaf, shortleaf, or other desirable native pine species to appropriate sites currently occupied by trees less suitable for the RCW. This would require a site-specific environmental analysis showing no detrimental effect to the RCW. Before restoration can begin, sufficient recruitment stands and foraging habitat must be identified to meet tentative population objectives identified in the EIS.

The tentative HMAs and accompanying direction will remain in place until the Forest Plan is amended or revised to incorporate the Revised Handbook.

This amendment is not a significant change in the Ouachita National Forest Land and Resource Management Plan. The determination that this is a non-significant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual 1920 (53 Fed. Reg. 26:07, July 15, 1983) (see ROD, page 27). This amendment designates tentative HMAs and establishes a tentative population objective for the Ouachita National Forest of 228 active clusters as identified in Table 2E-1 of the FEIS. The tentative population objectives are based on the acreage in tentative HMAs.

Appendix K

Land and Resource Management Plan

This direction for harvest treatments within the tentative HMAs does not alter the long-term relationship between levels of goods and services projected by the land and resource Management Plan.

The National Environmental Policy Act (NEPA) analysis and documentation for this change in direction has been documented in the Draft and Final EIS for Management of the Red-Cockaded Woodpecker and its habitat on National Forests in the Southern Region, June, 1995. This EIS is available for review at the Forest Supervisor's Office, Ouachita National Forest, Box 1270 Federal Building 100 Reserve, Hot Springs, AK 71902, and at the Regional Office, USDA, US Forest Service, Room 816N, 1720 Peachtree Road, NW, Atlanta, GA, 30367-9102.

National Forests and Grasslands in Texas Land and Resource Management Plan

Amendment #7

June, 1995

Portions of the National Forests and Grasslands in Texas (NFGT) are currently subject to the U.S. District Court, for the Eastern District of Texas, orders in the Texas case (see *Sierra Club v. Lyng*). The Court orders will remain in effect until they are removed or a new order is issued by the Court. The Forest has completed a draft EIS and proposed Forest Plan revision and expects to release the final EIS and Plan revision in the Fall of 1995. Until the final EIS is completed and the Plan is revised to incorporate the revised RCW Handbook direction, this amendment will remain in effect.

This Amendment designates tentative Habitat Management Areas (HMAs) for suitable red-cockaded woodpecker (RCW) habitat for the NFGT as shown in Appendix D of the Final EIS for the Management of the RCW and its Habitat on National Forests in the Southern Region, June, 1995.

The tentative HMAs include the area within the 1200-meter radius circles around active and inactive clusters that is subject to the Court orders, as well as the suitable RCW habitat between the 1200-meter circles.

Within the tentative HMAs, but outside the 1200-meter circles, current Forest Plan standards and guidelines will remain in effect with the exception that only the following silvicultural systems and practices will be allowed:

- Thinning.
- Irregular shelterwood method (two-aged).
- Single-tree and group selection methods (uneven-aged).
- Clearcutting method (even-aged) will be allowed to restore longleaf, shortleaf, or other desirable native pine species to appropriate sites currently occupied by trees less suitable for the RCW. This would require a site-specific environmental analysis showing no detrimental effect to the RCW. Before restoration can begin, sufficient recruitment stands and foraging habitat must be identified to meet tentative population objectives identified in the EIS.

The National Forests and Grasslands in Texas will implement those aspects of the RCW Standards and Guidelines that are not in conflict with, or compromise the court's orders. The following elements of the strategy will be implemented:

1. Monitoring guidelines that include trapping, handling, and banding of RCW.

Appendix L
Land and Resource Management Plan

2. Cluster improvement guidelines that recommend the expansion of the cluster size to 10 acres, from the FSH 2609.23 guide for a buffer of 200 feet around the nest trees.
3. Cluster protection guidelines that recommend predator control of snakes, flying squirrels, etc.
4. Cluster monumentation guidelines that recommend improvement from the FSH 2609.23 guidelines.
5. Cluster improvement guidelines that recommend installation of artificial cavities as needed.
6. All guidelines for implementation of tentative Habitat Management Areas (HMA) on land outside the 1200 meter (3/4 mile) zones as identified in the Forest Land Management Plan by Amendment or revision.

The tentative HMAs and accompanying direction will remain in place until the Forest Plan is amended or revised to incorporate the Revised Handbook.

This amendment is not a significant change in the NFGT Land and Resource Management Plan. The determination that this is a non-significant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual 1920 (53 Fed. Reg. 26:07, July 15, 1983) (see ROD, page 27). This amendment designates tentative HMAs and establishes a tentative population objective for the NFGT of 1179 active clusters as identified in Table 2E-1 of the FEIS. The tentative population objectives are based on the acreage in tentative HMAs.

This direction for harvest treatments within the tentative HMAs does not alter the long-term relationship between levels of goods and services projected by the Land and Resource Management Plan.

The National Environmental Policy Act (NEPA) analysis and documentation for this change in direction has been documented in the Draft and Final EIS for Management of the Red-Cockaded Woodpecker and its habitat on National Forests in the Southern Region, June, 1995. The FEIS is available for review at the Forest Supervisor's Office, Homer Garrison Federal Bldg., 701 N First Street, Lufkin, Texas, 75901, and at the Regional Office, USDA, US Forest Service, Room 816N, 1720 Peachtree Road, NW, Atlanta, GA, 30367-9102.

Cherokee National Forest Land and Resource Management Plan

Amendment #26

June, 1995

This Amendment designates tentative Habitat Management Areas (HMAs) for suitable RCW habitat as shown in Appendix D of the Final EIS for the Management of the Red cockaded Woodpecker and its Habitat On National Forests in the Southern Region, June, 1995.

These tentative HMAs include suitable RCW habitat between the 3/4-mile radius circles around active and inactive clusters currently protected by interim standards and guidelines (May 1990, May 1991, December 1991), as well as the area within the 3/4-mile radius circles. These interim standards and guidelines will remain in effect within the 3/4-mile radius circles until individual Forest Plans are further amended or revised to incorporate the Revised Handbook Direction.

Within the tentative HMAs, but outside the 3/4-mile radius circles, current Forest Plan standards and guidelines will remain in effect with the exception that only the following silvicultural systems and practices will be allowed:

- Thinning.
- Irregular shelterwood method (two-aged).
- Single-tree and group selection methods (uneven-aged).
- Clearcutting method (even-aged) will be allowed to restore longleaf, shortleaf, or other desirable native pine species to appropriate sites currently occupied by trees less suitable for the RCW. This would require a site-specific environmental analysis showing no detrimental effect to the RCW. Before restoration can begin, sufficient recruitment stands and foraging habitat must be identified to meet tentative population objectives identified in the EIS.

The tentative HMAs and accompanying direction will remain in place until the Forest Plan is amended or revised to incorporate the Revised Handbook.

This amendment is not a significant change in the Cherokee National Forest Land and Resource Management Plan. The determination that this is a non-significant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual 1920 (53 Fed. Reg. 26:07, July 15, 1983) (see ROD, page 27). This amendment designates tentative HMAs for the Cherokee National Forest as identified in Table 2E-1 of the FEIS.

This direction for harvest treatments within the tentative HMAs does not alter the long-term relationship between levels of goods and services projected by the land and resource Management Plan.

Appendix M
Land and Resource Management Plan

The National Environmental Policy Act (NEPA) analysis and documentation for this change in direction has been documented in the Draft and Final EIS for Management of the Red-Cockaded Woodpecker and its habitat on National Forests in the Southern Region, June, 1995. This EIS is available for review at the Forest Supervisor's Office, Cherokee National Forest, 2800 N. Ocoee St., Cleveland, TN 37312, and at the Regional Office, USDA, US Forest Service, Room 816N, 1720 Peachtree Road, NW, Atlanta, GA, 30367-9102.

APPENDIX N

Reasonable and Prudent Measures and Terms and Conditions from FWS Biological Opinion

This is a portion of U.S. Fish and Wildlife Service Biological Opinion on the U.S. Forest Service Environmental Impact Statement for the Management of the Red-Cockaded Woodpecker and its Habitat on National Forests in the Southern Region, May 1, 1995, which is contained in Appendix H of the Final EIS.

Reasonable and Prudent Measures

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Forest Service has a continuing duty to regulate the activity covered by this incidental take statement. If the Forest Service (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of RCWs.

(1) All personnel trapping, banding, transporting, feeding, or otherwise handling RCW eggs, nestlings, and/or adults will be properly trained and certified to do so by experienced individuals. Experienced individuals are those that have performed the activity in question: (a) for multiple years, (b) with many (50+ nestlings and adults; except for transporting/feeding) birds, and (c) in varied situations and under different environmental and ecological conditions. Individuals who have not been previously involved with transporting and feeding RCWs will, prior to transporting birds, communicate with Service's RCW Coordinator regarding translocation procedures.

(2) All personnel installing artificial cavities (inserts and drilled) will be properly trained and certified [see **Terms and Conditions** (6)(d)] to do so by experienced persons. Experienced persons include any of the following: those that; (a) developed the techniques, (2) have successfully installed at least 15 inserts, and (c) have successfully installed at least 25 drilled cavities. Additionally, all personnel installing artificial cavities will read about, and be familiar with, the techniques as described by the developers, (Copeyon 1990; Allen 1991; Taylor and Hooper 1991).

(3) All personnel designated to install cavity restrictors must first read, and then follow the recommendations in, "Restrictors for Red-cockaded Woodpecker Cavities" (Carter et al. 1989).

(4) The following specific measures are necessary to minimize and/or eliminate the take that has been associated with past RCW activities in previous years:

(a) no nets, used to trap adult RCWs, will be left unattended.

(b) all nestlings will be lowered to the ground and raised to the cavity, in an appropriate container (soft bag); they will not be transported up-and-down the ladder with the biologist.

(c) improperly "placed" (wrong position or wrong leg) leg bands (Service aluminum or colored plastic) will not be removed once in place. Bands improperly "attached", and thus potentially causing injury, may be removed and replaced if necessary and prudent (i.e., no permanent injury resulted from attaching or removing the band).

(d) all active cavity trees will be protected from fire during prescribed burning operations. Protection may involve any number of methods including, but not limited to: (1) raking around or back firing from the base of

the tree, (2) using a "wet" line or foam line around the tree or entire cluster, and (3) mechanically removing vegetation. All active trees lost or any active cavities destroyed by prescribed fire will be replaced within 48 hours by installing the appropriate number of artificial cavities, weather permitting.

(e) all active cavity trees cut for public safety or insect infestation reasons will be replaced, prior to cutting of the cavity tree, by installing artificial cavities in the closest, acceptable tree to the cavity tree being removed. Active nest (eggs/nestlings) trees will not be cut, except in extenuating circumstances (to be discussed and evaluated at the time); consultation with the Service will be required.

(5) During the nesting season (egg laying to fledging young), personnel will minimize the time spent within active clusters, and particularly within 200 feet of the nest tree, for the purpose of monitoring reproduction, banding young/adults, and other associated activities.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of ESA, the Forest Service must comply with the following terms and conditions (1-10), which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

(1) All conditions, reporting requirements, and related responsibilities as specified in the Forest Service's Endangered/Threatened Species Subpermittee Authorization #SA 94-42, Renewal SA 93-16, and in the Forest Service's subpermit issued under the Service's Region 2 Regional Director's blanket U.S. Fish and Wildlife Service Endangered Species Permit PRT-676811 and Master Migratory Bird Permit PRT-678718/701308, will be followed; above holds true for subsequent renewals of these subpermits.

(2) A copy of the above authorization will be distributed to, and carried by (in the field), all individuals involved with any of the activities discussed in the Incidental Take section of this Biological Opinion.

(3) A list of "certified" persons (i.e., the trainers), in reference to items # 1 and 2 in the reasonable and prudent measures, will be included in the Forest Services' annual report to the Service.

(4) The most experienced "translocation" biologist will be identified in the Forest Services annual report to the Service.

(5) The list of certified subpermittees by activity, i.e., drilled cavity installation, will be provided in the Forest Services' annual report to the Service.

(6) The following minimums are required before subpermittees will be considered qualified and thus, "certified" to perform the specified activity(ies) on their own:

(a) Banding nestlings: noose and band the young of 5 nests, but not less than 10 nestlings.

(b) Banding adults: net, extract from the net, and band 10 adults.

(c) Transporting/feeding adults: In addition to discussing the procedures with the Service's RCW Coordinator, first time translocation biologists will be accompanied, during the move, by at least one individual who has transported RCWs before.

(d) Installing drilled cavities: install at least 5 drilled cavities and 2 drilled starts.

(e) Installing cavity inserts: install at least 3 cavity inserts.

(7) Within 6 months of the date of this Biological Opinion, the Forest Service will provide draft translocation guidelines (transporting procedures, transport box design/construction, food types, feeding schedules, etc.) for Service review and concurrence. The Service will work with the Forest Service on development of these draft guidelines if requested to do so.

(8) To assure adequate action agency oversight of any incidental take resulting from the activities listed above (see **Amount and Extent of Take**) the following monitoring requirements will be implemented:

(a) Installing drilled cavities: All drilled cavities will be maintained according to the schedule provided on pages 19-22 of "A Modification of Copeyon's Drilling Technique for Making Artificial Red-cockaded Woodpecker Cavities (Taylor and Hooper 1991). The Forest Service will annually report the total number of drilled cavities installed and the number that leaked (any time during the maintenance examinations).

(b) Installing cavity inserts: With the exception of those installed to mitigate the loss of an active cavity (i.e., SPB, hurricane, or fire loss) all cavity inserts installed in clusters and recruitment stands will be screened for 2 weeks; then inspected to ensure that the insert was not cracked during installation causing resin to leak into the roost chamber. Total number of cavity inserts installed along with the number that leaked will be reported annually.

(c) Cavity restrictors: The total number of cavity restrictors installed by population will be reported annually. All cavity restrictors will be monitored the evening of the day they are installed. If the resident RCW will not enter the cavity after a reasonable period of time, apparently because of the restrictor, the restrictor will be adjusted and/or removed. Adjustment and/or reinstallation past normal roosting hours may disrupt behavior patterns and cause open-roosting; therefore, such measures will be delayed until the following day if necessary. All cavity restrictors will be installed and adjusted pursuant to the guidelines published by Carter et al. (1989).

(d) Translocation: The disposition of all translocated birds will be reported to the Service with an annual "Translocation Report". The Forest Service will monitor all translocated birds according to the following schedule:

(1) On the morning of release, observe birds until they leave vicinity of the cluster. Return that evening to do a roost check. If both birds return the first night, recheck status in 5-7 days. If still present, check in 1 month; if still present, schedule group for breeding season monitoring, including monitoring of eggs, nestlings and fledglings.

(2) If the released bird does not return first night, recheck status the following morning and/or evening. If bird is still not present after second day, recheck status at 5-7 day intervals for the next month. If bird returns, recheck status in 5-7 days, and then follow schedule above [(8)(d)(1)]. If after 1 month bird is not present, recheck 2-3 times during the breeding season (mid-April through early June. If the bird is present during the breeding season, implement the breeding season monitoring schedule.

The annual Translocation Report currently submitted by the Forest Service is sufficient for recording the disposition of translocated RCWs. However, following the above monitoring program will increase the accuracy of the findings regarding the success or failure (i.e., take) of each translocated bird. This information is critical for assessing the level of incidental take and making adjustments in, to increase the success of, the translocation program.

(e) Prescribed Burning: The total number of active clusters prescribed burned will be reported annually. The number of active cavity trees and active cavities destroyed by prescribed burning will also be reported, along with any known losses of nest cavities/eggs/nestlings. The number of artificial cavities installed to replace the losses will also be reported.

(f) Population monitoring: The total number of: (1) nests monitored, (2) nestlings handled and banded, and (3) adults trapped and banded, will be reported annually by population.

(9) To ensure that the level of authorized incidental take is not exceeded, any injury and/or death of RCWs (including, nests with eggs/nestlings; nestlings; and adults) or loss of active cavity trees, will be reported to the Service's RCW Recovery Coordinator and the Service's Regional Permit Coordinator within 72 hours.

All specimens, except those found in an advanced deteriorated condition, will be salvaged by the Forest Service person(s) finding the RCW(s). Specimens will be: (1) labeled (persons name; location of injury/death, i.e., Forest, district, and cluster; cause of injury/death; date of injury/death; other relevant information), (2) placed in a freezer as soon as possible, (3) held at the location until its disposition has been decided upon by the Service. A brief narrative report, detailing the circumstances surrounding the incident (i.e., active cavity tree loss, injury and/or death of the nestling(s) or adult(s) RCW) will be submitted to the RCW Coordinator within 1 week after the incident. Disposition of any RCW specimens must be coordinated with both the Service's law enforcement division and the RCW Recovery Coordinator.

(10) The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. With implementation of these measures the Service believes that no more than the following number of RCWs and active cavity trees will be incidentally "taken" annually: 47

adult RCWs killed/harassed/harmed (see **Amount or Extent of Take** for details); 3 nestlings killed (handling); 7 RCW nests, with up to 28 eggs and/or nestlings destroyed; and 10 active cavity trees destroyed. If during the course of the action, any of the levels of incidental take authorized for specific activities is exceeded, such incidental take represents new information requiring review of the reasonable and prudent measures provided and reinitiation of consultation with the Service. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

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